```
u = 0.5cm;
angle_radius = 8pt;
penthick = .3pt;
marksize = 4pt;
defaultscale := .7;
verbatimtex
\font\teni=cmmi10 scaled 700
\textfont1\teni
\textfont0\sevenrm
etex

input macros

beginfig(0);
draw(0, 0) -- (10u, 0);
pair za, zb, zc;
za = (u, 0);
zb = (4u, 0);
zc = (9u, 0);
pickup pencircle scaled 4pt;
dotlabel top(btex $A$ etex, za);
dotlabel top(btex $B$ etex, zb);
dotlabel top(btex $C$ etex, zc);
endfig;

beginfig(1);
draw(0, 0) -- (10u, 0);
dotlabel top(btex $A$ etex, za);
dotlabel top(btex $B$ etex, zb);
dotlabel top(btex $C$ etex, zc);
label bot(btex $3$ etex, .5[za, zb]);
label bot(btex $5$ etex, .5[zb, zc]);
endfig;

beginfig(2);
draw(0, 0) -- (7u, 0);
pair zaa, zbb, zcc;
zaa = (4u, 0);
zbb = (u, 0);
zcc = (6u, 0);
dotlabel top(btex $A$ etex, zaa);
dotlabel top(btex $B$ etex, zbb);
dotlabel top(btex $C$ etex, zcc);
label bot(btex $3$ etex, .5[zbb, zaa]);
label bot(btex $2$ etex, .5[zaa, zcc]);
endfig;

beginfig(3);
draw(0, 0) -- (9.6u, 0) -- (9.6u, 2u) -- (0, 2u) -- cycle;
draw(0.4u, 2u) -- (0.4u, 1.4u);
draw(6u, 2u) -- (6u, 1.4u);
draw(9.2u, 2u) -- (9.2u, 1.4u);
pickup pencircle scaled 4pt;
label bot(btex $0$ etex, (0.4u, 1.4u));
label bot(btex $7$ etex, (6u, 1.4u));
```

label *bot*(**btex** `$11$` **etex**, (9.2*u*, 1.4*u*));
endfig;

beginfig(4);

pair *za*, *zb*, *zc*, *zaa*, *zcc*, *zab*, *zbc*;
za = (*u*, 2*u*);
zb = (3*u*, 2*u*);
zc = (10*u*, 2*u*);
zaa = (*u*, 0.4*u*);
zcc = (10*u*, 0.4*u*);
zab = .5[*za*, *zb*];
zbc = .5[*zb*, *zc*];
pickup pencircle scaled 0.2*pt*;
draw(0, 2*u*) -- (11*u*, 2*u*);
draw *za* -- (*u*, 0);
draw *zb* -- (3*u*, 1.8*u*);
draw *zc* -- (10*u*, 0);
drawdblarrow *zaa* .. *zcc*;
draw *zab*{dir −30} .. *zbc* **dashed** *evenly*;
pickup pencircle scaled 4*pt*;
label *top*(**btex** `$A$` **etex**, *za*);
label *top*(**btex** `$B$` **etex**, *zb*);
label *top*(**btex** `$C$` **etex**, *zc*);
label *top*(**btex** `$5$` **etex**, .5[*zaa*, *zcc*]);
endfig;

beginfig(5);
pair *za*, *zx*, *zb*;
picture *house*;
za = (*u*, 0);
zx = (7*u*, 0);
zb = (11*u*, 0);
draw(0.5*u*, 0.2*u*) -- (1.5*u*, 0.2*u*) -- (1.5*u*, 1.2*u*) -- (0.5*u*, 1.2*u*) -- cycle;
draw(0.3*u*, 0.9*u*) -- (*u*, 2*u*) -- (1.7*u*, 0.9*u*);
house = *currentpicture*;
draw *house* shifted (10*u*, 0);
draw(0, 0) -- (12*u*, 0);
pickup pencircle scaled 4*pt*;
dotlabel *bot*(**btex** `$A$` **etex**, *za*);
dotlabel *bot*(**btex** `$x$` **etex**, *zx*);
dotlabel *top*(**btex** `$?$` **etex**, *zx*);
dotlabel *bot*(**btex** `$B$` **etex**, *zb*);
endfig;

beginfig(6);
draw(0, 0) -- (12*u*, 0);
dotlabel *top*(**btex** `$A$` **etex**, *za*);
dotlabel *top*(**btex** `$x$` **etex**, *zx*);
dotlabel *top*(**btex** `$B$` **etex**, *zb*);
dotlabel *bot*(**btex** `$AX+XB=AB$` **etex**, *zx*);
endfig;

beginfig(7);
pair *za*, *zb*, *zc*, *zd*;

draw(0, 0) -- (12u, 0);
za = (u, 0);
zb = (4.33u, 0);
zc = (7.33u, 0);
zd = (11u, 0);
dotlabel *bot*(**btex** `$A$` **etex**, za);
dotlabel *bot*(**btex** `$B$` **etex**, zb);
dotlabel *bot*(**btex** `$C$` **etex**, zc);
dotlabel *bot*(**btex** `$D$` **etex**, zd);
draw za{dir −30} .. zd;
draw zb{dir −30} .. zc;
endfig;

beginfig(8);
pair za, zx, zb;
picture *templ*;
draw(0, 0) -- (7u, 0);
za = (u, 0);
zb = (6u, 0);
zx = (3u, 0);
dotlabel *top*(**btex** `$100$` **etex**, za);
dotlabel *top*(**btex** `$50$` **etex**, zb);
templ = *currentpicture*;
label *bot*(**btex** `$A$` **etex**, za);
label *bot*(**btex** `$B$` **etex**, zb);
endfig;

beginfig(9);
draw *templ*;
draw za{dir −40} .. zx & zx{dir −30} .. zb;
dotlabel *bot*(**btex** `$$` **etex**, zx);
label *bot*(**btex** `$x$` **etex**, (2u, −0.5u));
label *bot*(**btex** `$3-x$` **etex**, (4.5u, −0.4u));
endfig;

beginfig(10);
pair za, zb, zc;
za = (2.8u, 2.8u);
zb = (3.4u, 2.2u);
zc = (4u, 0);
draw(0, 0) -- za;
draw(0, 0) -- zb **dashed** *evenly*;
draw(0, 0) -- zc;
label *bot*(**btex** `$0$` **etex**, (0, 0));
label *urt*(**btex** `$A$` **etex**, za);
label *urt*(**btex** `$B$` **etex**, zb);
label *bot*(**btex** `$C$` **etex**, zc);
endfig;

beginfig(11);
pair a, b, c, d, e, f;
a = (0, 4u);
b = (0, 0);
c = (4u, 0);
draw a -- b -- c;

mark_rt_angle(*c*, *b*, *a*);
label *urt*(**btex** `$90$` **etex**, (7, 7));
d = (5*u*, 0);
e = (7*u*, 0);
f = (9*u*, 0);
draw *d* -- *e* -- *f*;
dotlabel(**btex** `$$` **etex**, *e*);
mark_ang(*f*, *e*, *d*, *angle_radius*);
label *urt*(**btex** `$180$` **etex**, (7*u*, 7));
endfig;

beginfig(12);
pair *d*, *e*, *f*, *g*, *h*;
d = (−4*u*, 0);
e = (0, 0);
f = (4*u*, 0);
draw *d* -- *e* -- *f*;
dotlabel *bot*(**btex** `$$` **etex**, *e*);
for *i* = 1 **upto** 4:
  g := *f* rotated 40;
  draw *e* -- *g*;
  mark_ang(*f*, *e*, *g*, *angle_radius*);
  f := *g*;
endfor;
label *urt*(**btex** `$40$` **etex**, (.5*u*, .01*u*));
label *urt*(**btex** `$40$` **etex**, (.2*u*, .7*u*));
label *ulft*(**btex** `$40$` **etex**, (.3*u*, .8*u*));
label *ulft*(**btex** `$40$` **etex**, (−.5*u*, .4*u*));
label *ulft*(**btex** `$20$` **etex**, (−1.3*u*, −.1*u*));
endfig;

beginfig(13);
pair *c*, *d*, *e*, *f*, *g*;
c = (0, 0);
d = (4*u*, 2.5*u*);
e = (0, 2.5*u*);
f = (4*u*, 0);
draw *c* -- *d*;
draw *e* -- *f*;
g = *whatever*[*c*, *d*] = *whatever*[*e*, *f*];
mark_ang(*f*, *g*, *d*, *angle_radius*);
label *rt*(**btex** `$41$` **etex**, *g* shifted (.5*u*, 0));
endfig;

beginfig(14);
pair *c*, *d*, *e*, *f*, *g*;
c = (0, 0);
d = (4*u*, 2.5*u*);
e = (0, 2.5*u*);
f = (4*u*, 0);
draw *c* -- *d*;
draw *e* -- *f*;
g = *whatever*[*c*, *d*] = *whatever*[*e*, *f*];
mark_ang(*f*, *g*, *d*, *angle_radius*);
mark_ang(*e*, *g*, *c*, *angle_radius*);

label *rt*(**btex** `$41$` **etex**, *g* shifted (.5*u*, 0));
label *lft*(**btex** `$41$` **etex**, *g* shifted (−.5*u*, 0));
label *top*(**btex** `$139$` **etex**, *g* shifted (0, .2*u*));
label *bot*(**btex** `$139$` **etex**, *g* shifted (0, −.2*u*));
endfig;

beginfig(15);
pair *c*, *d*, *e*, *f*, *g*;
c = (−2*u*, 0);
d = (0, 0);
e = (2*u*, 0);
f = (2*u*, 2*u*);
draw *c* -- *e*;
draw *d* -- *f*;
mark_ang(*e*, *d*, *f*, *angle_radius*);
mark_angtwice(*f*, *d*, *c*, *angle_radius*);
label *ulft*(**btex** `$smejnie$` **etex**, *f*);
label *urt*(**btex** `$ygli$` **etex**, *f*);
drawarrow reverse((−.7*u*, .5*u*){dir 120} .. (−.5*u*, 2*u*));
drawarrow reverse((.7*u*, .2*u*){dir 20} .. (3*u*, 2*u*));
endfig;

beginfig(16);
pair *c*, *d*, *e*, *f*, *g*;
c = (0, 0);
d = (4*u*, 2.5*u*);
e = (0, 2.5*u*);
f = (4*u*, 0);
draw *c* -- *d*;
draw *e* -- *f*;
g = *whatever*[*c*, *d*] = *whatever*[*e*, *f*];
mark_ang(*f*, *g*, *d*, *angle_radius*);
mark_ang(*e*, *g*, *c*, *angle_radius*);
label *top*(**btex** `$vertikalnie$` **etex**, *d*);
label *lrt*(**btex** `$ygli$` **etex**, *d*);
drawdot(2.5*u*, 2.5*u*);
drawdot(1.2*u*, 1.2*u*);
drawdot(4*u*, 1.8*u*);
drawdot(2.8*u*, 1.2*u*);
drawarrow reverse((1.2*u*, 1.2*u*){dir 100} .. (2.5*u*, 2.5*u*));
drawarrow reverse((2.8*u*, 1.2*u*){dir 20} .. (4*u*, 1.8*u*));
endfig;

beginfig(17);
interim *defaultscale* := 1.5;
z_0 = (0, 0);
$z_1 = -z_3$ = (4*u*, 0);
$z_2 = -z_4$ = (0, 4*u*);
path *p*;
pair *clock*[];
p = z_1 .. z_2 .. z_3 .. z_4 .. cycle;
draw *p*;
for *i* = 0 **upto** 11:
  markpoint(*p*, *i*/3);
endfor;

label *lft*(**btex** `$3$` **etex**, z_1 shifted $(-.5u, 0)$);
endfig;

beginfig(18);
$z_0 = (0, 0)$;
$z_1 = (4u, 0)$;
$z_2 = (2u, 3u)$;
draw z_1 -- z_0 -- z_2;
label *rt*(**btex** `$A$` **etex**, z_2);
label *lft*(**btex** `$O$` **etex**, z_0);
label *rt*(**btex** `$C$` **etex**, z_1);
mark_ang(z_1, z_0, z_2, *angle_radius*);
$z_3 = z_1$ rotated -20;
$z_4 = z_2$ rotated -20;
draw z_3 -- z_0 -- z_4;
mark_ang(z_3, z_0, z_4, 10);
label *rt*(**btex** `$B$` **etex**, z_4);
label *rt*(**btex** `$D$` **etex**, z_3);
endfig;

beginfig(19);
$z_0 = (0, 0)$;
$z_1 = (4u, 0)$;
$z_2 = z_1$ rotated 20;
$z_3 = z_1$ rotated -20;
draw z_0 -- z_2;
draw z_0 -- z_1 **dashed** *evenly*;
label *rt*(**btex** `$bissectrica$` **etex**, z_1);
draw z_0 -- z_3;
mark_ang(z_1, z_0, z_2, *angle_radius*);
mark_ang(z_3, z_0, z_1, 10);
endfig;

beginfig(20);
$z_1 = (2u, u)$;
$z_2 = (1.7u, -u)$;
$z_3 = (-1.8u, .8u)$;
$z_4 = (-2u, -1.2u)$;
$z_0 = whatever[z_1, z_4] = whatever[z_2, z_3]$;
draw z_1 -- z_4;
draw z_2 -- z_3;
ang_and_bis(z_2, z_0, z_1);
ang_and_bistwice(z_1, z_0, z_3);
ang_and_bis(z_3, z_0, z_4);
ang_and_bistwice(z_4, z_0, z_2);
endfig;

beginfig(21);
$z_0 = (0, 0)$;
$z_1 = -z_3 = (2u, 0)$;
$z_2 = (-2u, 2u)$;
draw z_1 -- z_3;
draw z_0 -- z_2;
ang_and_bis(z_2, z_0, z_3);
ang_and_bistwice(z_1, z_0, z_2);

```
endfig;

beginfig(22);
z0 = (0, 0);
z1 = (0, 2u);
draw z0 -- z1;
pair rot[];
rot[1] = z1;
  for i = 1 upto 5:
  rot[i + 1] = rot[i] rotated 72;
  draw z0 -- rot[i + 1];
  mark_ang(rot[i], z0, rot[i + 1], angle_radius);
  endfor;
endfig;

beginfig(23);
z0 = (0, 0);
z1 = (0, 2u);
draw z0 -- z1;
pair rot[];
rot[1] = z1;
  for i = 1 upto 5:
  rot[i + 1] = rot[i] rotated 72;
  draw z0 -- rot[i + 1];
  endfor;
draw (−2u, 0) -- (2u, 0) dashed evenly;
label ulft(btex $1$ etex, (−.05u, .2u));
label urt(btex $2$ etex, (.05u, .2u));
label rt(btex $3$ etex, (1.5u, .3u));
label lrt(btex $4$ etex, (.5u, 0));
label bot(btex $5$ etex, (0, −.2u));
label llft(btex $6$ etex, (−.5u, 0));
label lft(btex $7$ etex, (−1.5u, .3u));
endfig;

beginfig(24);
z0 = (0, 0);
z1 = −z3 = (2u, u);
z2 = −z4 = (2u, −u);
draw z1 -- z3;
draw z2 -- z4;
mark_ang(z2, z0, z1, 11pt);
mark_angtwice(z1, z0, z4, angle_radius);
mark_ang(z4, z0, z3, 11pt);
mark_angtwice(z3, z0, z2, angle_radius);
label rt(btex $\alpha$ etex, z0 shifted (.6u, 0));
label bot(btex $\beta$ etex, z0 shifted (0, 1.6u));
label lft(btex $\alpha$ etex, z0 shifted (−.6u, 0));
label top(btex $\beta$ etex, z0 shifted (0, −1.6u));
endfig;

beginfig(25);
z0 = (0, 0);
z1 = (2u, 0);
z2 = z1 rotated 45;
```

$z_3 = z_1$ rotated 90;
draw z_1 -- z_0;
draw z_2 -- z_0;
draw z_3 -- z_0;
ang_and_bis(z_1, z_0, z_2);
ang_and_bistwice(z_2, z_0, z_3);
endfig;

beginfig(26);
$z_0 = (0, 0)$;
pair *za*, *zb*, *zc*;
$za = (2u, 0)$;
$z_1 = za$ rotated 30;
for $i = 0$ **upto** 3:
    $z[i + 2] = z[i]$ rotatedaround($z[i + 1]$, −120);
endfor;
path *p*, *so*, *ss*;
$p = z_0$ -- z_1 -- z_2 -- z_3 -- z_4 -- z_5 -- cycle;
$z_2 = z_4$ shifted *zb*;
show *zb*;
for $i = 0$ **upto** 3:
  draw *p* shifted $(i * zb)$;
endfor;
$z_5 = z_3$ shifted *zc*;
$so = p$ shifted *zc*;
for $i = 0$ **upto** 4:
  draw *so* shifted $(i * zb)$;
endfor;
$ss = p$ shifted $(0, -6u)$;
for $i = 0$ **upto** 3:
  draw *ss* shifted $(i * zb)$;
endfor;
endfig;

beginfig(27);
pair *za*, *zb*, *zc*, *zd*;
$za = (0, 0)$;
$zc = (3u, 0)$;
$zb = (2u, u)$;
draw *za* -- *zc*;
draw *za* -- *zb* **dashed** *evenly*;
draw *zb* -- *zc* **dashed** *evenly*;
dotlabel *bot*(**btex** `$A$` **etex**, *za*);
dotlabel *top*(**btex** `$B$` **etex**, *zb*);
dotlabel *bot*(**btex** `$C$` **etex**, *zc*);
label *top*(**btex** `$prjamoj pyt' (A->C)$` **etex**, $(-u, -1.7u)$);
label *top*(**btex** `$koro4e neprjamogo (A->B->C)$` **etex**, $(-u, -2.4u)$);
endfig;

beginfig(28);
pair *za*, *zb*, *zc*, *zd*;
$za = (0, 0)$;
$zc = (3u, 0)$;
$zb = (2u, u)$;
path *p*;

```
p = za -- zb -- zc -- cycle;
draw p;
tr(p, 45);
dotlabel bot(btex $A$ etex, za);
dotlabel top(btex $B$ etex, zb);
dotlabel bot(btex $C$ etex, zc);
endfig;

beginfig(29);
pair za, zb, zc, zd;
za = (0, 0);
zb = (u, 2u);
zc = (2.5u, 2u);
zd = (3u, 0);
draw za -- zb -- zc -- zd dashed evenly;
draw za -- zd;
dotlabel bot(btex $A$ etex, za);
dotlabel ulft(btex $B$ etex, zb);
dotlabel urt(btex $C$ etex, zc);
dotlabel bot(btex $D$ etex, zd);
endfig;

beginfig(30);
pair za, zb, zc, zd;
za = (0, 0);
zb = (u, 2u);
zc = (2.5u, 2u);
zd = (3u, 0);
draw za -- zb -- zc -- zd -- cycle;
draw za -- zc;
dotlabel bot(btex $A$ etex, za);
dotlabel ulft(btex $B$ etex, zb);
dotlabel urt(btex $C$ etex, zc);
dotlabel bot(btex $D$ etex, zd);
endfig;

beginfig(31);
z1 = (-2u, 0);
z2 = (0, 2u);
z3 = (2u, 0);
z4 = (.5u, -3u);
draw z1 -- z2 -- z3 -- z4 -- cycle;
draw z1 -- z3;
label ulft(btex $a$ etex, .5[z1, z2]);
label urt(btex $b$ etex, .5[z2, z3]);
label lrt(btex $c$ etex, .5[z3, z4]);
label llft(btex $d$ etex, .5[z4, z1]);
label bot(btex $x$ etex, .5[z1, z3]);
endfig;

beginfig(32);
z1 = (0, 0);
z2 = (2u, 2u);
z3 = (3u, .5u);
draw z1 -- z2 -- z3;
```

dotlabel(**btex** `$$` **etex**, z_1);
dotlabel(**btex** `$$` **etex**, z_2);
dotlabel(**btex** `$$` **etex**, z_3);
label *top*(**btex** `$warnir$` **etex**, z_2 shifted $(.5u, .5u)$);
label *ulft*(**btex** `$5$` **etex**, $.5[z_1, z_2]$);
label *urt*(**btex** `$3$` **etex**, $.65[z_2, z_3]$);
drawarrow reverse(z_2 shifted $(.2u, 0)${dir -20} .. (z_2 shifted $(u, .5u)$));
endfig;

beginfig(33);
$z_0 = (0, 0)$;
$z_1 = (-3u, .5u)$;
$z_2 = (-.2u, 2u)$;
$z_3 = (2u, .5u)$;
$z_4 = (-.3u, -3u)$;
draw z_1 -- z_0 -- z_3 **dashed** *evenly*;
draw z_2 -- z_0 -- z_4 **dashed** *evenly*;
dotlabel *lft*(**btex** `$A$` **etex**, z_1);
dotlabel *top*(**btex** `$B$` **etex**, z_2);
dotlabel *rt*(**btex** `$C$` **etex**, z_3);
dotlabel *bot*(**btex** `$D$` **etex**, z_4);
dotlabel(**btex** `$$` **etex**, z_0);
label *ulft*(**btex** `$?$` **etex**, z_0 shifted $(-.1u, .1u)$);
endfig;

beginfig(34);
$z_0 = (0, 0)$;
$z_1 = (-3u, .5u)$;
$z_2 = (-.5u, 2u)$;
$z_3 = (2u, .5u)$;
$z_4 = (-.6u, -3u)$;
draw z_1 -- z_0 -- z_3 **dashed** *evenly*;
draw z_2 -- z_0 -- z_4 **dashed** *evenly*;
dotlabel *lft*(**btex** `$A$` **etex**, z_1);
dotlabel *top*(**btex** `$B$` **etex**, z_2);
dotlabel *rt*(**btex** `$C$` **etex**, z_3);
dotlabel *bot*(**btex** `$D$` **etex**, z_4);
dotlabel(**btex** `$$` **etex**, z_0);
draw z_1 -- z_3;
draw z_2 -- z_4;
$z_5 = whatever[z_1, z_3] = whatever[z_2, z_4]$;
dotlabel(**btex** `$$` **etex**, z_5);
drawarrow z_0 .. z_5 shifted $(.1u, -.1u)$;
endfig;

beginfig(35);
$z_1 = (0, 0)$;
$z_2 = (u, 2u)$;
$z_3 = (3u, 0)$;
$z_4 = (1.1u, u)$;
$z_5 = whatever[z_1, z_4] = whatever[z_2, z_3]$;
draw z_1 -- z_2 -- z_3 -- cycle;
draw z_1 -- z_4 -- z_3;
draw z_4 -- z_5 **dashed** *evenly*;
label *lft*(**btex** `$A$` **etex**, z_1);

label *top*(**btex** `$B$` **etex**, z_2);
label *rt*(**btex** `$C$` **etex**, z_3);
dotlabel *top*(**btex** `$D$` **etex**, z_4);
label *urt*(**btex** `$E$` **etex**, z_5);
endfig;

beginfig(36);
$z_1 = (0, 0)$;
$z_2 = (u, 2u)$;
$z_3 = (3.5u, 1.5u)$;
$z_4 = (3u, -u)$;
$z_5 = (4u, .5u)$;
drawarrow z_1 .. $(.5[z_1, z_3])$;
draw $.5[z_1, z_3]$ -- z_3;
draw z_1 -- z_2 -- z_4 -- z_5 -- z_3 **dashed** *evenly*;
dotlabel(**btex** `$$` **etex**, z_1);
dotlabel(**btex** `$$` **etex**, z_2);
dotlabel(**btex** `$$` **etex**, z_3);
dotlabel(**btex** `$$` **etex**, z_4);
dotlabel(**btex** `$$` **etex**, z_5);
endfig;

beginfig(37);
$z_1 = (0, 0)$;
$z_2 = (-1.7u, .5u)$;
$z_3 = (-2.2u, 2.2u)$;
$z_4 = (-.8u, 3.5u)$;
$z_5 = (.5u, 3.2u)$;
$z_6 = (1.8u, 2u)$;
$z_7 = (u, .3u)$;
$z_8 = (-u, -.5u)$;
$z_9 = (-.3u, 4u)$;
$z_{10} = \mathit{whatever}[z_8, z_9] = \mathit{whatever}[z_1, z_2]$;
$z_{11} = \mathit{whatever}[z_8, z_9] = \mathit{whatever}[z_4, z_5]$;
path q;
$q = z_{10}$ -- z_2 -- z_3 -- z_4 -- z_{11} -- cycle;
tr(q, 45);
draw z_1 -- z_2 -- z_3 -- z_4 -- z_5 -- z_6 -- z_7 -- cycle;
draw z_8 -- z_9;
endfig;

beginfig(38);
$z_1 = (0, 0)$;
$z_2 = (0, 2u)$;
$z_3 = (u, 2u)$;
$z_4 = (u, u)$;
$z_5 = (2u, u)$;
$z_6 = (2u, 0)$;
draw z_1 -- z_2 -- z_3 -- z_4 -- z_5 -- z_6 -- cycle;
grid(2, 2);
endfig;

beginfig(39);
$z_1 = (0, 3u)$;
$z_2 = (0, 5u)$;

$z_3 = (u, 5u)$;
$z_4 = (u, 4u)$;
$z_5 = (2u, 4u)$;
$z_6 = (2u, 3u)$;
path p;
$p = z_1$ -- z_2 -- z_3 -- z_4 -- z_5 -- z_6 -- cycle;
draw p;
draw z_1 -- z_4;
draw p shifted $(4u, 0)$;
draw z_4 shifted $(4u, 0)$ -- $.5[z_1, z_2]$ shifted $(4u, 0)$;
draw z_4 shifted $(4u, 0)$ -- $.5[z_1, z_6]$ shifted $(4u, 0)$;
path qo, qs, qt;
$qo = .5[z_1, z_2]$ -- z_4 shifted $(-.5u, 0)$ -- $.5[z_3, z_4]$ shifted $(-.5u, 0)$ -- $.5[z_3, z_4]$;
$qs = z_4$ shifted $(-.5u, 0)$ -- $.5[z_5, z_6]$ shifted $(-1.5u, 0)$ -- $.5[z_5, z_6]$ shifted $(-u, 0)$ -- $.5[z_6, z_1]$;
$qt = .5[z_5, z_6]$ shifted $(-u, 0)$ -- $.5[z_5, z_6]$ shifted $(-.5u, 0)$ -- $.5[z_4, z_5]$;
draw p shifted $(0, -3u)$;
draw qo shifted $(0, -3u)$;
draw qs shifted $(0, -3u)$;
draw qt shifted $(0, -3u)$;
$z_7 = .75[z_1, z_2]$ shifted $(-.2u, -3u)$;
$z_8 = z_7$ shifted $(2.4u, 0)$;
$z_9 = .75[z_1, z_6]$ shifted $(0, -3.1u)$;
$z_{10} = z_9$ shifted $(0, 2.3u)$;
pickup pencircle scaled $.15pt$;
draw z_7 -- z_8 **dashed** *evenly* shifted $(.1u, 0)$;
draw$(z_7$ -- $z_8)$ shifted $(0, -u)$ **dashed** *evenly* shifted $(.1u, 0)$;
draw z_9 -- z_{10} **dashed** *evenly*;
draw$(z_9$ -- $z_{10})$ shifted $(-u, 0)$ **dashed** *evenly*;
grid$(6, 5)$;
endfig;

beginfig(40);
$z_1 = (0, 0)$;
$z_2 = (0, 2u)$;
$z_3 = (2u, 0)$;
path p;
$p = z_1$ -- z_2 -- z_3 -- cycle;
$tr(p, 45)$;
draw p;
grid$(2, 2)$;
endfig;

beginfig(41);
$z_1 = (0, 0)$;
$z_2 = (0, 4u)$;
$z_3 = (4u, 4u)$;
$z_4 = (4u, 0)$;
path p;
$p = (u, 2u)$ -- $(u, 3u)$ -- $(3u, 3u)$ -- $(3u, 0)$ -- $(2u, 0)$ -- $(2u, 2u)$ -- cycle;
$tr(p, 45)$;
draw p;
draw z_1 -- z_2 -- z_3 -- z_4 -- cycle;
grid$(4, 4)$;
endfig;

beginfig(42);
$z_1 = (0, 0)$;
$z_2 = (0, 4u)$;
$z_3 = (4u, 4u)$;
$z_4 = (4u, 0)$;
path p, q, r;
$p = (u, 2u)$ -- $(u, 3u)$ -- $(3u, 3u)$ -- $(3u, 0)$ -- $(2u, 0)$ -- $(2u, 2u)$ -- cycle;
$q = (0, 3u)$ -- $(2u, 3u)$ -- $(2u, u)$ -- $(4u, u)$;
$r = (u, 0)$ -- $(u, 2u)$ -- $(3u, 2u)$ -- $(3u, 4u)$;
$tr(p, 45)$;
draw q;
draw r;
draw z_1 -- z_2 -- z_3 -- z_4 -- cycle;
grid(4, 4);
endfig;

beginfig(43);
path p;
$p = (0, 0)$ -- $(0, u)$ -- (u, u) -- $(u, 4u)$ -- $(5u, 4u)$ -- $(5u, u)$ -- $(4u, u)$ -- $(4u, 0)$ -- cycle;
$tr(p, 45)$;
draw p;
grid(5, 4);
endfig;

beginfig(44);
path p;
$p = (-1cm, 0)$ .. $(0, 1cm)$ .. $(1cm, 0)$;
fill p{$down$} .. $(0, 0)${$-1, 2$} .. {$down$} cycle;
draw p .. $(0, -1cm)$ .. cycle;
endfig;

beginfig(45);
path a, b, c, d, e, f, g;
$a = (0, 0)$ -- $(.5u, 1.5u)$ -- $(u, 0)$ -- cycle;
$b = ((0, 0)$ -- $(u, 1.5u)$ -- $(u, 0)$ -- cycle) shifted $(2u, 0)$;
$c = ((0, 0)$ -- $(0, u)$ -- (u, u) -- $(u, 0)$ -- cycle) shifted $(4u, 0)$;
$d = ((0, 0)$ -- $(.5u, .866u)$ -- $(u, 0)$ -- cycle) shifted $(0, -2u)$;
$e = ($*fullcircle* scaled u shifted $(.5u, .5u))$ shifted $(2u, -2u)$;
$f = ((0, u)$ -- $(0, 2u)$ -- $(u, 2u)$ -- $(u, 4u)$ -- $(2u, 4u)$ -- $(2u, 3u)$ -- $(4u, 3u)$ -- $(4u, 2u)$ -- $(3u, 2u)$ -- $(3u, 0)$ -- $(2u, 0)$ -- $(2u, u)$ -- cycle) scaled 0.25 shifted $(4u, -2u)$;
$tr(a, 45)$;
draw a;
draw b;
draw c;
draw d;
draw e;
draw f;
endfig;

beginfig(46)
$z_1 = (0, 0)$;
$z_2 = (0, 2u)$;
$z_3 = (2u, 2u)$;
$z_4 = (2u, 0)$;
path p;

$p = z_1$ -- z_2 -- z_3 -- z_4 -- cycle;
draw p;
draw z_1 -- z_3;
draw p shifted $(4u, 0)$;
draw$(.5[z_1, z_4]$ -- $.5[z_2, z_3])$ shifted $(4u, 0)$;
endfig;

beginfig(47);
$z_1 = (0, 0)$;
$z_2 = (1.5u, 2u)$;
$z_3 = (4u, 0)$;
draw z_1 -- z_2 -- z_3 -- cycle;
mark_ang$(z_3, z_1, z_2, .5u)$;
draw_marked$(z_1$ -- $z_2, 1)$;
draw_marked$(z_1$ -- $z_3, 2)$;
endfig;

beginfig(48);
$z_1 = (0, 0)$;
$z_2 = (1.5u, 2u)$;
$z_3 = (4u, 0)$;
draw z_1 -- z_2 -- z_3 -- cycle;
mark_ang$(z_3, z_1, z_2, .5u)$;
mark_angtwice$(z_2, z_3, z_1, .5u)$;
draw_marked$(z_1$ -- $z_3, 1)$;
endfig;

beginfig(49);
$z_1 = (0, 0)$;
$z_2 = (1.5u, 2u)$;
$z_3 = (4u, 0)$;
draw z_1 -- z_2 -- z_3 -- cycle;
draw_marked$(z_1$ -- $z_2, 2)$;
draw_marked$(z_1$ -- $z_3, 1)$;
draw_marked$(z_2$ -- $z_3, 3)$;
endfig;

beginfig(50);
$z_1 = (0, 0)$;
$z_2 = (2u, 3u)$;
$z_3 = (4u, 0)$;
$z_4 = .9[z_1, z_2]$;
$z_5 = .9[z_1, z_3]$;
draw z_1 -- z_2;
draw z_1 -- z_3;
draw z_4 -- z_5 **dashed** *evenly*;
dotlabel(**btex** `$$` **etex**, z_4);
dotlabel(**btex** `$$` **etex**, z_5);
endfig;

beginfig(51);
$z_1 = (0, 0)$;
$z_2 = (2u, 3u)$;
$z_3 = (4u, 0)$;
$z_4 = (.5u, 2.2u)$;

draw z_1 -- z_2 **dashed** *evenly*;
draw z_1 -- z_3;
draw z_4 -- z_3 **dashed** *evenly*;
dotlabel(**btex** `$$` **etex**, z_1);
dotlabel(**btex** `$$` **etex**, z_3);
endfig;

beginfig(52);
$z_1 = (0, 0)$;
$z_2 = (u, 3u)$;
$z_3 = (2u, 0)$;
draw z_1 -- z_2 -- z_3 -- cycle;
draw_marked(z_1 -- z_2, 1);
draw_marked(z_2 -- z_3, 1);
mark_ang(z_3, z_1, z_2, $.5u$);
mark_ang(z_2, z_3, z_1, $.5u$);
endfig;

beginfig(53);
$z_1 = (0, 0)$;
$z_2 = (1.5u, 3u)$;
$z_3 = (5u, 0)$;
$z_4 = (1.5u, -3u)$;
draw z_1 -- z_2 -- z_3 -- cycle;
draw z_1 -- z_4 -- z_3;
draw z_2 -- z_4 **dashed** *evenly*;
draw_marked(z_1 -- z_2, 1);
markcommon(z_1, z_3);
draw_marked(z_1 -- z_4, 1);
draw_marked(z_2 -- z_3, 2);
draw_marked(z_4 -- z_3, 2);
mark_ang(z_1, z_2, z_4, $.7u$);
mark_ang(z_2, z_4, z_1, $.7u$);
mark_angtwice(z_4, z_2, z_3, $.5u$);
mark_angtwice(z_3, z_4, z_2, $.5u$);
label *ulft*(**btex** `$A$` **etex**, z_1);
label *top*(**btex** `$B$` **etex**, z_2);
label *urt*(**btex** `$C$` **etex**, z_3);
label *llft*(**btex** `$\alpha_1$` **etex**, z_1);
label *bot*(**btex** `$\alpha_1$` **etex**, z_4);
label *lrt*(**btex** `$\alpha_1$` **etex**, z_3);
endfig;

beginfig(54);
$z_1 = (0, 0)$;
$z_2 = z_1$ shifted $(u, 2u)$;
$z_4 = (4u, 0)$;
$z_3 = z_4$ shifted $(u, 2u)$;
draw z_1 -- z_2 -- z_3 -- z_4 -- cycle;
draw z_2 -- z_4;
draw z_1 -- z_3;
$z_5 = whatever[z_2, z_4] = whatever[z_1, z_3]$;
draw_marked(z_2 -- z_5, 1);
draw_marked(z_5 -- z_4, 1);

draw_marked(z_1 -- z_5, 2);
draw_marked(z_5 -- z_3, 2);
mark_ang(z_2, z_5, z_1, .5u);
mark_ang(z_4, z_5, z_3, .5u);
label *lft*(**btex** `$A$` **etex**, z_1);
label *lft*(**btex** `$B$` **etex**, z_2);
label *rt*(**btex** `$C$` **etex**, z_3);
label *rt*(**btex** `$D$` **etex**, z_4);
label *top*(**btex** `$O$` **etex**, z_5);
endfig;

beginfig(55);
$z_1 = (0, 0)$;
$z_2 = z_1$ shifted $(-u, 2u)$;
$z_4 = (4u, 0)$;
$z_3 = z_4$ shifted $(-u, 2u)$;
$z_5 = \mathit{whatever}[z_2, z_4] = \mathit{whatever}[z_1, z_3]$;
draw z_1 -- z_2 **dashed** *evenly*;
draw z_3 -- z_4;
draw z_2 -- z_4;
draw z_1 -- z_3;
draw_marked(z_2 -- z_5, 2);
draw_marked(z_5 -- z_4, 2);
draw_marked(z_1 -- z_5, 1);
draw_marked(z_5 -- z_3, 1);
mark_ang(z_2, z_5, z_1, .5u);
mark_ang(z_4, z_5, z_3, .5u);
label *lft*(**btex** `$D$` **etex**, z_1);
label *lft*(**btex** `$E$` **etex**, z_2);
label *rt*(**btex** `$B$` **etex**, z_3);
label *rt*(**btex** `$5$` **etex**, .5[z_3, z_4]);
label *rt*(**btex** `$C$` **etex**, z_4);
label *bot*(**btex** `$A$` **etex**, z_5);
endfig;

beginfig(56);
$z_1 = (0, 0)$;
$z_2 = z_1$ shifted $(-u, 2u)$;
$z_4 = (4u, 0)$;
$z_3 = z_4$ shifted $(-u, 2u)$;
$z_5 = \mathit{whatever}[z_2, z_4] = \mathit{whatever}[z_1, z_3]$;
draw z_2 -- z_3 -- z_4 **dashed** *evenly*;
draw z_1 -- z_2 -- z_4 -- cycle;
draw_marked(z_2 -- z_5, 2);
draw_marked(z_5 -- z_4, 2);
draw_marked(z_1 -- z_5, 1);
draw_marked(z_5 -- z_3, 1);
label *lft*(**btex** `$A$` **etex**, z_1);
label *lft*(**btex** `$C$` **etex**, z_2);
dotlabel *rt*(**btex** `$N$` **etex**, z_3);
label *bot*(**btex** `$5$` **etex**, .5[z_1, z_4]);
label *lft*(**btex** `$4$` **etex**, .5[z_1, z_2]);
label *rt*(**btex** `$B$` **etex**, z_4);
label *bot*(**btex** `$M$` **etex**, z_5);

endfig;

beginfig(57);
$z_1 = (0, 0)$;
$z_2 = (u, 2u)$;
$z_3 = (4u, .3u)$;
$z_4 = .5[z_2, z_3]$;
path p, r, rr;
$p = z_1$ -- z_2 -- z_3 -- cycle;
$r = z_1$ -- z_2 -- z_4 -- cycle;
$tr(r, 45)$;
draw p;
draw r;
picture *fir*;
fir = *currentpicture*;
$rr = r$ shifted $(0, -4u)$;
draw *fir* shifted $(0, -4u)$;
draw *fir*;
label lft(**btex** `$A$` **etex**, z_1);
label lft(**btex** `$B$` **etex**, z_2);
label urt(**btex** `$M$` **etex**, z_4);
label rt(**btex** `$C$` **etex**, z_3);
label lft(**btex** `$A'$` **etex**, z_1) shifted $(0, -4u)$;
label lft(**btex** `$B'$` **etex**, z_2) shifted $(0, -4u)$;
label urt(**btex** `$M'$` **etex**, z_4) shifted $(0, -4u)$;
label rt(**btex** `$C'$` **etex**, z_3) shifted $(0, -4u)$;
endfig;

beginfig(59);
$z_1 = (0, 0)$;
$z_2 = (0, 2u)$;
$z_3 = (4u, 0)$;
$z_4 = .5[z_2, z_3]$;
path p, q, r;
$p = z_1$ -- z_2 -- z_3 -- cycle;
draw p;
$q = z_1$ -- z_4;
draw q;
$r = z_1$ -- z_2 -- z_4 -- cycle;
draw p shifted $(0, -4u)$;
draw r shifted $(0, -4u)$;
label lft(**btex** `$A$` **etex**, z_1);
label lft(**btex** `$B$` **etex**, z_2);
label urt(**btex** `$D$` **etex**, z_4);
label rt(**btex** `$C$` **etex**, z_3);
label lft(**btex** `$A'$` **etex**, z_1) shifted $(0, -4u)$;
label lft(**btex** `$B'$` **etex**, z_2) shifted $(0, -4u)$;
label urt(**btex** `$D'$` **etex**, z_4) shifted $(0, -4u)$;
label rt(**btex** `$C'$` **etex**, z_3) shifted $(0, -4u)$;
endfig;

beginfig(60);
$z_1 = (0, 0)$;
$z_2 = z_1$ shifted $(u, 2u)$;
$z_4 = (4u, 0)$;

$z_3 = z_4$ shifted $(u, 2u)$;
draw z_1 -- z_2 -- z_3 -- z_4 -- cycle;
draw z_1 -- z_3;
draw_marked$(z_1$ -- $z_2, 1)$;
draw_marked$(z_2$ -- $z_3, 2)$;
draw_marked$(z_3$ -- $z_4, 1)$;
draw_marked$(z_4$ -- $z_1, 2)$;
label *lft*(**btex** `$A$` **etex**, z_1);
label *lft*(**btex** `$B$` **etex**, z_2);
label *rt*(**btex** `$C$` **etex**, z_3);
label *rt*(**btex** `$D$` **etex**, z_4);
endfig;

beginfig(61);
$z_1 = (0, 0)$;
$z_2 = (2u, 2u)$;
$z_3 = (4u, 0)$;
$z_{11} = z_1$ shifted $(-.4u, 0)$;
$z_{12} = z_1$ shifted $(0, -.4u)$;
$z_{21} = z_2$ shifted $(.1u, .5u)$;
$z_{22} = z_2$ shifted $(.5u, .1u)$;
$z_{23} = z_2$ shifted $(-.5u, .1u)$;
$z_{24} = z_2$ shifted $(-.1u, .5u)$;
$z_{31} = z_3$ shifted $(0, -.4u)$;
$z_{32} = z_3$ shifted $(.4u, 0)$;
$z_{41} = z_1$ shifted $(-.2828u, -.2828u)$;
$z_{42} = z_1$ shifted $(-.2828u, .2828u)$;
$z_{51} = z_3$ shifted $(.2828u, -.2828u)$;
$z_{52} = z_3$ shifted $(.2828u, .2828u)$;
dotlabel(**btex** `$$` **etex**, z_1);
dotlabel(**btex** `$$` **etex**, z_2);
dotlabel(**btex** `$$` **etex**, z_3);
draw z_{11} -- z_{21} -- z_{22} -- z_{12} -- cycle;
draw z_{23} -- z_{24} -- z_{32} -- z_{31} -- cycle;
draw z_{41} -- z_{42} -- z_{52} -- z_{51} -- cycle;
endfig;

beginfig(62);
$z_1 = (0, 0)$;
$z_2 = (-u, 1.5u)$;
$z_3 = (0, 4u)$;
$z_4 = (3u, 1.5u)$;
$z_5 = (-2u, 1.5u)$;
$z_6 = (4u, 1.5u)$;
dotlabel(**btex** `$$` **etex**, z_1);
dotlabel(**btex** `$$` **etex**, z_2);
dotlabel(**btex** `$$` **etex**, z_3);
dotlabel(**btex** `$$` **etex**, z_4);
draw z_1 -- z_2 -- z_3 -- z_4 -- cycle;
drawarrow z_2 shifted $(-.2u, 0)$ .. z_5;
drawarrow z_4 shifted $(.2u, 0)$ .. z_6;
draw(z_1 shifted $(0, .5u)$ -- z_2 shifted $(-.5u, 0)$ -- z_3 shifted $(0, -.5u)$ -- z_4 shifted $(0.5u, 0)$ -- cycle) shifted $(0, -4u)$;
dotlabel(**btex** `$$` **etex**, z_1 shifted $(0, -3.5u)$);

dotlabel(**btex** `$$` **etex**, z_2 shifted $(-.5u, -4u)$);
dotlabel(**btex** `$$` **etex**, z_3 shifted $(0, -4.5u)$);
dotlabel(**btex** `$$` **etex**, z_4 shifted $(0.5u, -4u)$);
endfig;

beginfig(63);
$z_0 = (0, 0)$;
$z_1 = (u, 1.5u)$;
$z_2 = (2u, 0)$;
path p;
path q;
$p = z_0$ -- z_1 -- z_2 -- cycle;
draw p;
$q = p$ scaled 2 shifted $(3u, 0)$;
draw q;
endfig;

beginfig(64);
$z_1 = (0, 0)$;
$z_2 = z_1$ shifted $(u, 2u)$;
$z_4 = (4u, 0)$;
$z_3 = z_4$ shifted $(u, 2u)$;
draw z_1 -- z_2 -- z_3 -- z_4 -- cycle;
draw z_1 -- z_3;
mark_ang(z_4, z_1, z_3, $.4u$);
mark_angtwice(z_3, z_1, z_2, $.5u$);
mark_ang(z_2, z_3, z_1, $.4u$);
mark_angtwice(z_1, z_3, z_4, $.5u$);
label *lft*(**btex** `$A$` **etex**, z_1);
label *lft*(**btex** `$B$` **etex**, z_2);
label *rt*(**btex** `$C$` **etex**, z_3);
label *rt*(**btex** `$D$` **etex**, z_4);
endfig;

beginfig(65);
$z_1 = (0, 0)$;
$z_2 = (u, 3u)$;
$z_3 = (2u, 0)$;
$z_4 = z_1$ shifted $(2.5u, -4u)$;
path p, q;
$p = z_1$ -- z_2 -- z_3 -- cycle;
$q = p$ shifted $(2.5u, -4u)$ rotatedaround(z_4, 90);
draw p;
draw q;
mark_ang(z_3, z_1, z_2, *angle_radius*);
mark_ang(z_2, z_3, z_1, *angle_radius*);
draw_marked(z_1 -- z_2, 1);
draw_marked(z_3 -- z_2, 1);
endfig;

beginfig(67);
$z_1 = (0, 0)$;
$z_3 = (2.5u, 0)$;
$z_4 = .5[z_1, z_3]$;
$z_2 = z_4$ shifted $(0, 3u)$;

path p;
$p = z_1$ -- z_2 -- z_3 -- cycle;
draw p;
draw z_2 -- z_4;
draw_marked(z_1 -- z_2, 1);
draw_marked(z_3 -- z_2, 1);
draw_marked(z_1 -- z_4, 2);
draw_marked(z_4 -- z_3, 2);
label *top*(**btex** `$A$` **etex**, z_2);
label *lft*(**btex** `$B$` **etex**, z_1);
label *rt*(**btex** `$C$` **etex**, z_3);
label *bot*(**btex** `$M$` **etex**, z_4);
endfig;

beginfig(68);
$z_1 = (0, 0)$;
$z_3 = (2.5u, 0)$;
$z_4 = .5[z_1, z_3]$;
$z_2 = z_4$ shifted $(0, 3u)$;
path p;
$p = z_1$ -- z_2 -- z_3 -- cycle;
draw p;
draw z_2 -- z_4;
draw_marked(z_1 -- z_2, 1);
draw_marked(z_3 -- z_2, 1);
mark_ang(z_1, z_2, z_4, *angle_radius*);
mark_ang(z_4, z_2, z_3, $10pt$);
label *top*(**btex** `$A$` **etex**, z_2);
label *lft*(**btex** `$B$` **etex**, z_1);
label *rt*(**btex** `$C$` **etex**, z_3);
label *bot*(**btex** `$M$` **etex**, z_4);
endfig;

beginfig(69);
$z_1 = (0, 0)$;
$z_3 = (2.5u, 0)$;
$z_4 = .5[z_1, z_3]$;
$z_2 = z_4$ shifted $(0, 3u)$;
path p;
$p = z_1$ -- z_2 -- z_3 -- cycle;
draw p;
draw z_2 -- z_4;
draw_marked(z_1 -- z_2, 1);
draw_marked(z_3 -- z_2, 1);
mark_rt_angle(z_2, z_4, z_1);
mark_rt_angle(z_3, z_4, z_2);
label *top*(**btex** `$A$` **etex**, z_2);
label *lft*(**btex** `$B$` **etex**, z_1);
label *rt*(**btex** `$C$` **etex**, z_3);
label *bot*(**btex** `$M$` **etex**, z_4);
endfig;

beginfig(70);
$z_1 = (0, 0)$;
$z_3 = (2.5u, 0)$;

$z_4 = .5[z_1, z_3]$;
$z_2 = z_4$ shifted $(0, 3u)$;
$z_5 = z_4$ shifted $(0, -3u)$;
path p;
$p = z_1$ -- z_2 -- z_3 -- cycle;
draw p;
draw z_2 -- z_4;
draw z_4 -- z_5;
draw z_1 -- z_5 **dashed** *evenly*;
draw_marked(z_1 -- z_4, 1);
draw_marked(z_4 -- z_3, 1);
draw_marked(z_2 -- z_4, 2);
draw_marked(z_4 -- z_5, 2);
mark_ang(z_1, z_2, z_4, *angle_radius*);
mark_ang(z_4, z_2, z_3, $10pt$);
label *top*(**btex** `$A$` **etex**, z_2);
label *lft*(**btex** `$B$` **etex**, z_1);
label *rt*(**btex** `$C$` **etex**, z_3);
label *ulft*(**btex** `$M$` **etex**, z_4);
label *bot*(**btex** `$N$` **etex**, z_5);
endfig;

beginfig(73);
$z_1 = (0, 0)$;
$z_3 = (2.5u, 0)$;
$z_4 = .5[z_1, z_3]$;
$z_2 = z_4$ shifted $(0, 3u)$;
$z_5 = z_4$ shifted $(0, -3u)$;
path p;
$p = z_1$ -- z_2 -- z_3 -- cycle;
draw p;
draw z_2 -- z_4 **dashed** *evenly*;
draw_marked(z_1 -- z_2, 1);
draw_marked(z_2 -- z_3, 1);
label *top*(**btex** `$X$` **etex**, z_2);
label *lft*(**btex** `$A$` **etex**, z_1);
label *rt*(**btex** `$B$` **etex**, z_3);
label *bot*(**btex** `$M$` **etex**, z_4);
endfig;

beginfig(75);
$z_1 = (0, 0)$;
$z_3 = (4u, 0)$;
$z_2 = (1.5u, 1.5u)$;
$z_4 = (1.5u, -1.5u)$;
path p, q, r;
$p = z_1$ -- z_2 -- z_3 -- z_4 -- cycle;
draw p;
draw z_1 -- z_3;
draw z_2 -- z_4;
draw_marked(z_1 -- z_2, 1);
draw_marked(z_1 -- z_4, 1);
draw_marked(z_2 -- z_3, 2);
draw_marked(z_3 -- z_4, 2);

endfig;

beginfig(76);
$z_1 = (0, 0)$;
path a;
$a =$ *fullcircle* scaled $4u$;
$z_2 =$ **point** 1 **of** a;
$z_3 =$ **point** 7 **of** a;
draw a;
draw z_1 -- z_2;
draw z_1 -- z_3;
pickup pencircle scaled $0.2u$;
drawdot z_1;
drawdot z_2;
drawdot z_3;
endfig;

beginfig(77);
$z_1 = (0, 0)$;
path a;
$a =$ *fullcircle* scaled $4u$;
$z_2 =$ **point** 1 **of** a;
$z_3 =$ **point** 7 **of** a;
draw a;
draw z_1 -- z_2;
draw z_1 -- z_3;
draw z_2 -- z_3;
pickup pencircle scaled $0.2u$;
drawdot z_1;
drawdot z_2;
drawdot z_3;
endfig;

beginfig(78);
$z_1 = (0, 0)$;
$z_4 = (1.2u, -u)$;
path a;
$a =$ *fullcircle* scaled $4u$;
$z_2 = (2.4u, 0)$;
$z_3 = (1.7u, -2.3u)$;
draw a;
draw a shifted $(2.4u, 0)$;
draw a shifted $(1.7u, -2.3u)$;
draw z_1 -- z_4 **dashed** *evenly*;
draw z_2 -- z_4 **dashed** *evenly*;
draw z_3 -- z_4 **dashed** *evenly*;
pickup pencircle scaled $0.2u$;
drawdot z_1;
drawdot z_2;
drawdot z_3;
drawdot z_4;
endfig;

beginfig(79);
$z_1 = (0, 0)$;

$z_2 = (1.5u, 0)$;
$z_3 = (3.5u, 0)$;
$z_4 = (6u, 0)$;
path a, b;
$a =$ *fullcircle* scaled $3u$;
$b =$ *fullcircle* scaled $5u$ shifted z_4; ;
draw a;
draw b;
drawarrow z_1 .. z_2;
drawarrow z_4 .. z_3;
label *top*(**btex** `$3$` **etex**, .5[z_1, z_2]);
label *top*(**btex** `$5$` **etex**, .5[z_3, z_4]);
endfig;

beginfig(80);
$z_1 = (0, 0)$;
$z_2 = (.5u, 0)$;
$z_3 = (-.5u, -1.4u)$;
$z_4 = (2u, 2u)$;
path a, b;
$a =$ *fullcircle* scaled $3u$;
$b =$ *fullcircle* scaled $5u$ shifted $(.5u, 0)$;
draw a;
draw b;
draw z_1 .. z_2;
drawarrow z_1 .. z_3;
drawarrow z_2 .. z_4;
label *top*(**btex** `$1$` **etex**, .5[z_1, z_2]);
label *ulft*(**btex** `$3$` **etex**, .5[z_1, z_3]);
label *top*(**btex** `$5$` **etex**, .5[z_2, z_4]);
endfig;

beginfig(81);
$z_1 = (0, 0)$;
path a;
$a =$ *fullcircle* scaled $4u$;
$z_2 = (3u, 0)$;
draw a;
draw a shifted z_2;
pickup pencircle scaled $0.2u$;
drawdot z_1;
drawdot z_2;
picture q;
$q =$ *currentpicture*;
draw q shifted $(0, 6u)$;
endfig;

beginfig(83);
$z_1 = (0, 0)$;
path a;
$a =$ *fullcircle* scaled $4u$;
$z_2 =$ **point** 2 **of** a;
$z_3 =$ **point** 3.6 **of** a;
draw a;
draw$(-2u, 0)$ -- $(2u, 0)$;

draw z_2 -- z_3;
pickup pencircle scaled $0.2u$;
drawdot z_1;
drawdot z_2;
drawdot z_3;

beginfig(84);
$z_1 = (0, 0)$;
path a;
$a =$ *fullcircle* scaled $4u$;
$z_2 =$ **point** 1 **of** a;
$z_3 =$ **point** 4 **of** a;
draw a;
draw z_1 -- z_2 -- z_3 -- cycle;
pickup pencircle scaled $0.2u$;
drawdot z_1;
drawdot z_2;
drawdot z_3;
endfig;
endfig;

beginfig(85);
$z_1 = (0, 0)$;
path a;
$a =$ *fullcircle* scaled $4u$;
$z_2 =$ **point** 1 **of** a;
$z_3 =$ **point** 4 **of** a;
$z_4 = .5[z_2, z_3]$;
draw a;
draw z_1 -- z_2 -- z_3 -- cycle;
draw z_1 -- z_4;
draw_marked(z_2 -- z_4, 1);
draw_marked(z_3 -- z_4, 1);
draw_marked(z_1 -- z_2, 2);
draw_marked(z_1 -- z_3, 2);
pickup pencircle scaled $0.2u$;
drawdot z_1;
drawdot z_2;
drawdot z_3;
drawdot z_4;
endfig;

beginfig(86);
$z_1 = (0, 0)$;
$z_2 = (-2u, 0)$;
$z_3 = (2u, 0)$;
draw$(-2.5u, 0)$ -- $(2.5u, 0)$;
draw(z_2 -- z_3 scaled .2) shifted $(.5u, 2u)$;
label *bot*(**btex** `$A$` **etex**, z_1);
label *bot*(**btex** `$B$` **etex**, z_2);
label *bot*(**btex** `$C$` **etex**, z_3);
pickup pencircle scaled $0.2u$;
drawdot z_1;
drawdot z_2;
drawdot z_3;

draw z_2 shifted $(.5u, 2u)$;
draw z_3 shifted $(-u, 2u)$;
endfig;

beginfig(87);
$z_1 = (0, 0)$;
$z_2 = (3u, .5u)$;
$z_3 = (2.2u, 2.3u)$;
draw z_1 -- z_2 -- z_3 -- cycle;
label *llft*(**btex** `$A$` **etex**, z_1);
label *lrt*(**btex** `$B$` **etex**, z_2);
label *urt*(**btex** `$C$` **etex**, z_3);
endfig;

beginfig(88);
$z_1 = (-u, 2u)$;
$z_2 = (2u, -u)$;
path a, b, c, d, e;
numeric *rad*;
rad = $3u$;
a = *fullcircle* scaled 2*rad* shifted z_1;
b = *fullcircle* scaled 2*rad* shifted z_2;
z_{10} = **point** 0.2 **of** a;
z_{16} = **point** 5.8 **of** a;
z_{17} = **point** 7 **of** a;
z_{22} = **point** 1.8 **of** b;
z_{23} = **point** 3 **of** b;
z_{24} = **point** 4.2 **of** b;
$c = z_{16}$ .. z_{17} .. z_{10};
$d = z_{22}$ .. z_{23} .. z_{24};
e = **subpath**$(6, 7)$ **of** a;
$z_3 = a$ intersectionpoint b;
$z_4 = e$ intersectionpoint b;
draw c;
draw d;
draw z_1 -- z_2;
label *llft*(**btex** `$A'$` **etex**, z_1);
label *lrt*(**btex** `$B'$` **etex**, z_2);
pickup pencircle scaled $0.2u$;
drawdot z_1;
drawdot z_2;
drawdot z_3;
drawdot z_4;
endfig;

beginfig(89);
$z_0 = (0, 0)$;
$z_{11} = (2.5u, 2u)$;
$z_{12} = (3u, 0)$;
$z_4 = (0, -2u)$;
path a, b;
$a = z_0$ -- z_{11};
z_1 = **point** 0.7 **of** a;
$z_2 = (2.6u, 0)$;
$b = z_0$ -- z_1 -- z_2 -- cycle;

tr(*b*, 45);
draw *a*;
draw z_0 -- z_{12};
draw z_1 -- z_2;
$z_5 = z_0$ rotatedaround(z_4, −60);
$z_6 = z_1$ rotatedaround(z_4, −60);
$z_7 = z_2$ rotatedaround(z_4, −60);
$z_{21} = z_{11}$ rotatedaround(z_4, −60);
$z_{22} = z_{12}$ rotatedaround(z_4, −60);
draw z_5 -- z_{22};
draw z_5 -- z_{21} **dashed** *evenly*;
draw z_6 -- z_7 **dashed** *evenly*;
endfig;

beginfig(90);
$z_1 = (-u, 0)$;
$z_2 = (2u, 0)$;
path *a*, *b*, *c*, *d*, *e*, *f*;
numeric *rad*;
rad = 2*u*;
a = *fullcircle* scaled 2*rad* shifted z_1;
b = *fullcircle* scaled 2*rad* shifted z_2;
z_{10} = **point** 0 **of** *a*;
z_{11} = **point** 1.2 **of** *a*;
z_{17} = **point** 6.8 **of** *a*;
z_{23} = **point** 2.8 **of** *b*;
z_{24} = **point** 4 **of** *b*;
z_{25} = **point** 5.2 **of** *b*;
c = z_{17} .. z_{10} .. z_{11};
d = z_{23} .. z_{24} .. z_{25};
e = **subpath**(7, 8) **of** *a*;
z_3 = *a* intersectionpoint *b*;
z_4 = *e* intersectionpoint *b*;
draw *c*;
draw *d*;
f = (z_3 -- z_4) yscaled 1.2;
draw *f* **dashed** *evenly*;
label *llft*(**btex** `$A'$` **etex**, z_1);
label *lrt*(**btex** `$B'$` **etex**, z_2);
pickup pencircle scaled 0.2*u*;
drawdot z_1;
drawdot z_2;
drawdot z_3;
drawdot z_4;
endfig;

beginfig(82);
$z_0 = (0, 0)$;
$z_{11} = (2.5u, 2u)$;
$z_{12} = (3u, 0)$;
path *a*, *b*;
a = z_0 -- z_{11};
z_1 = **point** 0.5 **of** *a*;
$z_2 = (1.5u, 0)$;

draw a;
draw z_0 -- z_{12};
$z_{11} = z_{12}$ zscaled (co, si);
    $z_4 = z_{12}$ rotated ($.5 * \text{angle}(co, si)$);
$b = z_0$ -- z_4;
    draw b **dashed** *evenly*;
$z_{14} =$ **point** 1.7 **of** b;
label *top*(**btex** `$X$` **etex**, z_{14});
endfig;

beginfig(91);
$z_1 = (-u, 0)$;
$z_2 = (2u, 0)$;
path a, b, c, d, e, f;
numeric *rad*;
rad $= 2u$;
$a =$ *fullcircle* scaled 2*rad* shifted z_1;
$b =$ *fullcircle* scaled 2*rad* shifted z_2;
$z_{10} =$ **point** 0 **of** a;
$z_{11} =$ **point** 1.2 **of** a;
$z_{17} =$ **point** 6.8 **of** a;
$z_{23} =$ **point** 2.8 **of** b;
$z_{24} =$ **point** 4 **of** b;
$z_{25} =$ **point** 5.2 **of** b;
$c = z_{17} .. z_{10} .. z_{11}$;
$d = z_{23} .. z_{24} .. z_{25}$;
$e =$ **subpath**(7, 8) **of** a;
$z_3 = a$ intersectionpoint b;
$z_4 = e$ intersectionpoint b;
draw c;
draw d;
$f = (z_3$ -- $z_4)$ yscaled 1.2;
draw f **dashed** *evenly*;
draw z_1 -- z_2;
label *llft*(**btex** `$A$` **etex**, $.5[z_1, z_2]$ shifted $(-.3u, 0)$);
pickup pencircle scaled $0.2u$;
drawdot z_1;
drawdot z_2;
drawdot z_3;
drawdot z_4;
endfig;

beginfig(92);
$z_1 = (-u, 0)$;
$z_2 = (2u, 0)$;
path a, b, c, d, e, f;
numeric *rad*;
rad $= 1.8u$;
$a =$ *fullcircle* scaled 2*rad* shifted z_1;
$b =$ *fullcircle* scaled 2*rad* shifted z_2;
$z_{10} =$ **point** 0 **of** a;
$z_{11} =$ **point** 1.2 **of** a;
$z_{17} =$ **point** 6.8 **of** a;
$z_{23} =$ **point** 2.8 **of** b;

z_{24} = **point** 4 **of** b;
z_{25} = **point** 5.2 **of** b;
$c = z_{17} .. z_{10} .. z_{11}$;
$d = z_{23} .. z_{24} .. z_{25}$;
e = **subpath**(7, 8) **of** a;
$z_3 = a$ intersectionpoint b;
$z_4 = e$ intersectionpoint b;
draw c **dashed** *evenly*;
draw d;
$z_{31} = z_3$ shifted $(1.3u, 0)$;
$z_{41} = z_3$ shifted $(1.3u, 0)$;
$f = z_3 .. z_{31} .. z_{41} .. z_4 ..$ cycle;
$z_5 = .5[z_4, z_{31}]$;
draw f;
draw$(-.7u, 0)$ -- $(3u, 0)$;
$z_6 = (2.5u, 0)$;
label *lft*(**btex** `$A$` **etex**, z_3);
label *bot*(**btex** `$1$` **etex**, z_6);
pickup pencircle scaled $0.2u$;
drawdot z_5;
drawdot z_6;
drawdot z_3;
drawdot z_4;
endfig;

beginfig(93);
$z_1 = (0, 0)$;
$z_2 = (2.5u, 2u)$;
draw z_1 -- z_2;
draw$(z_1$ -- $z_2)$ shifted $(0, u)$;
endfig;

beginfig(94);
$z_0 = (0, 2u)$;
$z_1 = (2.5u, 4u)$;
draw z_0 -- z_1;
draw$(z_0$ -- $z_1)$ shifted $(0, u)$ **dashed** *evenly*;
$z_2 = (-.5u, 0)$;
$z_3 = (3u, 0)$;
$z_4 = (0, 1.2u)$;
$z_5 = (3.5u, 1.2u)$;
$z_6 = (.7u, -0.5u)$;
$z_7 = (2.3u, 2.2u)$;
$z_8 = whatever[z_2, z_3] = whatever[z_6, z_7]$;
$z_9 = whatever[z_4, z_5] = whatever[z_6, z_7]$;
draw z_2 -- z_3;
draw z_4 -- z_5;
draw z_6 -- z_7;
mark_ang(z_3, z_8, z_9, *angle_radius*);
mark_ang(z_5, z_9, z_7, *angle_radius*);
pickup pencircle scaled $0.2u$;
drawdot $.5[z_0, z_1]$ shifted $(0, u)$;
endfig;

beginfig(96);

$z_0 = (0, 3u)$;
$z_1 = (2.5u, 3u)$;
draw z_0 -- z_1;
draw$(z_0$ -- $z_1)$ shifted $(0, -u)$;
draw$(z_0$ -- $z_1)$ shifted $(0, -2u)$;
$z_2 = z_1$ shifted $(0, -u)$;
$z_3 = (4u, 2.5u)$;
$z_4 = z_1$ shifted $(0, -2u)$; ;
draw z_1 -- z_3 **dashed** *evenly*;
draw z_2 -- z_3 **dashed** *evenly*;
label *ulft*(**btex** `$m$` **etex**, z_0);
label *ulft*(**btex** `$m$` **etex**, z_0 shifted $(0, -u)$);
label *urt*(**btex** `$X?$` **etex**, z_3);
label *lrt*(**btex** `$l$` **etex**, z_1 shifted $(0, -2u)$);
pickup pencircle scaled $0.2u$;
drawdot z_3;
endfig;

beginfig(97);
$z_2 = (-.5u, 0)$;
$z_3 = (3u, 0)$;
$z_4 = (0, 1.2u)$;
$z_5 = (3.5u, 1.2u)$;
$z_0 = (.7u, 2.4u)$;
$z_1 = (4u, 2.4u)$;
$z_6 = (.7u, -0.5u)$;
$z_7 = (2.5u, 3.8u)$;
$z_8 = whatever[z_2, z_3] = whatever[z_6, z_7]$;
$z_9 = whatever[z_4, z_5] = whatever[z_6, z_7]$;
$z_{10} = whatever[z_0, z_1] = whatever[z_6, z_7]$;
draw z_0 -- z_1;
draw z_2 -- z_3;
draw z_4 -- z_5;
draw z_6 -- z_7;
mark_ang$(z_3, z_8, z_9,$ *angle_radius*$)$;
mark_ang$(z_5, z_9, z_7,$ *angle_radius*$)$;
mark_ang$(z_1, z_{10}, z_7,$ *angle_radius*$)$;
endfig;

beginfig(98);
$z_0 = (0, 0)$;
$z_1 = (2u, 0)$;
$z_2 = (0, 1.2u)$;
$z_3 = (2u, 1.2u)$;
$z_4 = (u, -.5u)$;
$z_5 = (u, 1.7u)$;
$z_6 = wharever[z_0, z_1] = whatever[z_4, z_5]$;
$z_7 = whatever[z_2, z_3] = whatever[z_4, z_5]$;
draw z_0 -- z_1;
draw z_2 -- z_3;
draw z_4 -- z_5;
mark_rt_angle(z_1, z_6, z_7);
mark_rt_angle(z_3, z_7, z_5);
mark_rt_angle(z_2, z_7, z_6);

mark_rt_angle(z_0, z_6, z_4);
endfig;

beginfig(99);
$z_2 = (-.5u, 0)$;
$z_3 = (3u, 0)$;
$z_4 = (0, 1.2u)$;
$z_5 = (3.5u, 1.2u)$;
$z_6 = (.7u, -0.5u)$;
$z_7 = (2u, 2.2u)$;
$z_8 = whatever[z_2, z_3] = whatever[z_6, z_7]$;
$z_9 = whatever[z_4, z_5] = whatever[z_6, z_7]$;
draw z_2 -- z_3;
draw z_4 -- z_5;
draw z_6 -- z_7;
endfig;

beginfig(100);
$z_2 = (-.5u, 0)$;
$z_3 = (3u, 0)$;
$z_4 = (0, 1.2u)$;
$z_5 = (3.5u, 1.2u)$;
$z_6 = (.7u, -0.5u)$;
$z_7 = (2u, 2.2u)$;
$z_8 = whatever[z_2, z_3] = whatever[z_6, z_7]$;
$z_9 = whatever[z_4, z_5] = whatever[z_6, z_7]$;
draw z_2 -- z_3;
draw z_4 -- z_5;
draw z_6 -- z_7;
mark_ang(z_3, z_8, z_9, *angle_radius*);
mark_ang(z_4, z_9, z_8, *angle_radius*);
endfig;

beginfig(101);
$z_2 = (-.5u, 0)$;
$z_3 = (3u, 0)$;
$z_4 = (0, 1.2u)$;
$z_5 = (3.5u, 1.2u)$;
$z_6 = (.7u, -0.5u)$;
$z_7 = (2u, 2.2u)$;
$z_8 = whatever[z_2, z_3] = whatever[z_6, z_7]$;
$z_9 = whatever[z_4, z_5] = whatever[z_6, z_7]$;
draw z_2 -- z_3;
draw z_4 -- z_5;
draw z_6 -- z_7;
mark_ang(z_3, z_8, z_9, $4pt$);
mark_angtwice(z_8, z_9, z_5, $4pt$);
endfig;

beginfig(102);
$z_1 = (0, 2u)$;
$z_2 = (3u, 3.5u)$;
$z_3 = .5[z_1, z_2]$;
$z_4 = z_2$ rotatedaround(z_3, 90);
draw z_1 -- z_2;

drawarrow z_4 -- z_3 **dashed** *evenly*;
path p, q;
$p = (z_1$ -- $z_2)$ rotated -40 shifted $(-u, 0)$;
$q = (z_3$ -- $z_4)$ rotated -40 shifted $(-u, 0)$;
draw p;
drawarrow q **dashed** *evenly*;
endfig;

beginfig(104);
$z_1 = (0, 0)$;
$z_2 = (u, 2.5u)$;
$z_3 = (3u, 2.5u)$;
$z_4 = (4u, 0)$;
draw z_1 -- z_2 -- z_3 -- z_4 -- cycle;
draw z_1 -- z_3;
mark_ang(z_4, z_1, z_3, *angle_radius*);
mark_ang(z_2, z_3, z_1, *angle_radius*);
label *llft*(**btex** `$A$` **etex**, z_1);
label *ulft*(**btex** `$B$` **etex**, z_2);
label *urt*(**btex** `$C$` **etex**, z_3);
label *lrt*(**btex** `$D$` **etex**, z_4);
endfig;

beginfig(106);
$z_1 = (0, 2u)$;
$z_2 = (3u, 2u)$;
$z_3 = (u, 3u)$;
$z_4 = (u, u)$;
draw z_1 -- z_2;
draw z_3 -- z_4;
$z_{11} = z_1$ shifted $(1.5u, -2u)$;
$z_{22} = z_2$ shifted $(1.5u, -2u)$;
$z_{33} = (z_3$ yscaled 1.8) shifted $(1.5u, -2.5u)$;
$z_{44} = (z_4$ yscaled 1.7) shifted $(1.5u, -2.5u)$;
$z_5 = whatever[z_1, z_2] = whatever[z_3, z_4]$;
$z_6 = whatever[z_1, z_2] = whatever[z_{33}, z_{44}]$;
$z_7 = whatever[z_{11}, z_{22}] = whatever[z_{33}, z_{44}]$;
draw z_{11} -- z_{22};
draw z_{33} -- z_{44};
mark_rt_angle(z_2, z_5, z_3);
mark_rt_angle(z_2, z_6, z_{33});
mark_rt_angle(z_{22}, z_7, z_{33});
label *bot*(**btex** `$l2$` **etex**, z_1);
label *bot*(**btex** `$l1$` **etex**, z_{11});
label *urt*(**btex** `$m2$` **etex**, z_3);
label *urt*(**btex** `$m1$` **etex**, z_{33});
endfig;

beginfig(107);
$z_1 = (u, 2.7u)$;
$z_2 = (0, 0)$;
$z_3 = (2u, 0)$;
$z_{11} = z_1$ shifted $(.7u, -1.5u)$;
$z_{22} = z_2$ shifted $(.7u, -1.5u)$;

$z_{33} = z_3$ shifted $(.7u, -1.5u)$;
draw z_1 -- z_2 -- z_3;
draw z_{11} -- z_{22} -- z_{33};
mark_ang(z_3, z_2, z_1, *angle_radius*);
mark_ang(z_{33}, z_{22}, z_{11}, *angle_radius*);
endfig;

beginfig(108);
$z_1 = (u, 2.7u)$;
$z_2 = (0, 0)$;
$z_3 = (2u, 0)$;
$z_{11} = z_1$ shifted $(.7u, -1.5u)$;
$z_{22} = z_2$ shifted $(.7u, -1.5u)$;
$z_{33} = z_3$ shifted $(.7u, -1.5u)$;
$z_4 = whatever[z_2, z_3] = whatever[z_{11}, z_{22}]$;
draw z_1 -- z_2 -- z_3;
draw z_{11} -- z_{22} -- z_{33};
mark_ang(z_3, z_2, z_1, *angle_radius*);
mark_ang(z_{33}, z_{22}, z_{11}, *angle_radius*);
mark_ang(z_3, z_4, z_{11}, *angle_radius*);
endfig;

beginfig(109);
$z_1 = (0, 0)$;
$z_2 = (3u, 0)$;
$z_4 = z_1$ shifted $(0, 1.5u)$;
$z_5 = z_2$ shifted $(0, 1.5u)$;
$z_3 = .4[z_4, z_5]$;
draw z_1 -- z_2 -- z_3 -- cycle;
draw z_4 -- z_5;
mark_ang(z_2, z_1, z_3, *angle_radius*);
mark_ang(z_4, z_3, z_1, *angle_radius*);
mark_angtwice(z_3, z_2, z_1, *angle_radius*);
mark_angtwice(z_2, z_3, z_5, *angle_radius*);
label *llft*(**btex** `$A$` **etex**, z_1);
label *top*(**btex** `$B$` **etex**, z_3);
label *lrt*(**btex** `$C$` **etex**, z_2);
endfig;

beginfig(110);
$z_1 = (0, 0)$;
$z_2 = (3u, 0)$;
$z_3 = z_2$ rotated 60;
label *urt*(**btex** `$60$` **etex**, z_1 shifted $(.2u, 0)$);
label *bot*(**btex** `$60$` **etex**, z_3 shifted $(0, -.4u)$);
label *ulft*(**btex** `$60$` **etex**, z_2 shifted $(-.2u, 0)$);
draw z_1 -- z_2 -- z_3 -- cycle;
draw_marked(z_1 -- z_2, 1);
draw_marked(z_1 -- z_3, 1);
draw_marked(z_3 -- z_2, 1);
endfig;

beginfig(111);
$z_1 = (0, 0)$;
$z_2 = (u, 2.5u)$;

$z_3 = (3u, 2.5u)$;
$z_4 = (4u, -1.2u)$;
draw z_1 -- z_2 -- z_3 -- z_4 -- cycle;
draw z_1 -- z_3 **dashed** *evenly*;
endfig;

beginfig(112);
$z_1 = (0, 0)$;
$z_2 = (-u, u)$;
$z_3 = (.5u, 2.5u)$;
$z_4 = (2u, 2u)$;
$z_5 = (2u, .5u)$;
draw z_1 -- z_2 -- z_3 -- z_4 -- z_5 -- cycle;
draw z_1 -- z_3 **dashed** *evenly*;
draw z_1 -- z_4 **dashed** *evenly*;
endfig;

beginfig(113);
$z_1 = (0, 0)$;
$z_2 = (3u, 0)$;
$z_3 = (u, 1.2u)$;
$z_4 = (-2u, 0)$;
draw z_1 -- z_2 -- z_3 -- cycle;
draw z_1 -- z_4;
mark_ang(z_1, z_3, z_2, $6pt$);
mark_angtwice(z_3, z_2, z_1, *angle_radius*);
label *llft*(**btex** `$A$` **etex**, z_1);
label *top*(**btex** `$B$` **etex**, z_3);
label *lrt*(**btex** `$C$` **etex**, z_2);
endfig;

beginfig(114);
$z_1 = (0, 0)$;
$z_2 = (2u, 0)$;
$z_3 = (3u, 2u)$;
$z_4 = .5[z_1, z_3]$;
draw z_1 -- z_2 -- z_3 -- cycle;
draw z_2 -- z_4;
mark_ang(z_1, z_4, z_2, $6pt$);
mark_ang(z_4, z_2, z_1, $6pt$);
label *llft*(**btex** `$A$` **etex**, z_1);
label *top*(**btex** `$B$` **etex**, z_3);
label *lrt*(**btex** `$C$` **etex**, z_2);
label *ulft*(**btex** `$D$` **etex**, z_4);
endfig;

beginfig(115);
$z_1 = (0, 0)$;
$z_2 = (u, 2u)$;
$z_3 = (3u, 0)$;
$z_{33} = (4u, 0)$;
$z_{11} = 1.4[z_2, z_1]$;
$z_{22} = 1.2[z_3, z_2]$;
draw z_1 -- z_2 -- z_3 -- cycle;
draw z_{11} -- z_1;

draw z_{22} -- z_2;
draw z_{33} -- z_3;
mark_ang(z_{11}, z_1, z_3, $6pt$);
mark_ang(z_{22}, z_2, z_1, $6pt$);
mark_ang(z_{33}, z_3, z_2, $6pt$);
endfig;

beginfig(116);
$z_1 = (0, u)$;
$z_2 = (u, 2u)$;
$z_3 = (3u, u)$;
$z_4 = (u, -.5u)$;
$z_{11} = 1.4[z_2, z_1]$;
$z_{22} = 1.4[z_3, z_2]$;
$z_{33} = 1.4[z_4, z_3]$;
$z_{44} = 1.4[z_1, z_4]$;
draw z_1 -- z_2 -- z_3 -- z_4 -- cycle;
draw z_{11} -- z_1;
draw z_{22} -- z_2;
draw z_{33} -- z_3;
draw z_{44} -- z_4;
mark_ang(z_{11}, z_1, z_4, $6pt$);
mark_ang(z_{22}, z_2, z_1, $6pt$);
mark_ang(z_{33}, z_3, z_2, $6pt$);
mark_ang(z_{44}, z_4, z_3, $6pt$);
endfig;

beginfig(117);
$z_1 = (0, u)$;
$z_2 = (u, 2u)$;
$z_3 = (3u, u)$;
$z_4 = (2u, -1.2u)$;
$z_5 = (.5u, -.5u)$;
$z_{11} = 1.4[z_2, z_1]$;
$z_{22} = 1.4[z_3, z_2]$;
$z_{33} = 1.4[z_4, z_3]$;
$z_{44} = 1.4[z_5, z_4]$;
$z_{55} = 1.4[z_1, z_5]$;
draw z_1 -- z_2 -- z_3 -- z_4 -- z_5 -- cycle;
draw z_{11} -- z_1;
draw z_{22} -- z_2;
draw z_{33} -- z_3;
draw z_{44} -- z_4;
draw z_{55} -- z_5;
mark_ang(z_{11}, z_1, z_5, $6pt$);
mark_ang(z_{22}, z_2, z_1, $6pt$);
mark_ang(z_{33}, z_3, z_2, $6pt$);
mark_ang(z_{44}, z_4, z_3, $6pt$);
mark_ang(z_{55}, z_5, z_4, $6pt$);
endfig;

beginfig(118);
$z_1 = (u, 0)$;
$z_2 = (.5u, 2u)$;
$z_3 = (2u, 3u)$;

$z_4 = (3.5u, 2u)$;
$z_5 = (3u, 0)$;
draw z_1 -- z_3 -- z_5 -- z_2 -- z_4 -- cycle;
mark_ang(z_4, z_1, z_3, $6pt$);
mark_ang(z_5, z_2, z_4, $6pt$);
mark_ang(z_1, z_3, z_5, $6pt$);
mark_ang(z_2, z_4, z_1, $6pt$);
mark_ang(z_3, z_5, z_2, $6pt$);
endfig;

beginfig(119);
$z_1 = (0, 0)$;
$z_2 = (u, 2u)$;
$z_3 = (2u, 0)$;
$z_4 = .5[z_2, z_3]$;
draw z_1 -- z_2 -- z_3 -- cycle;
draw z_1 -- z_4;
label *llft*(**btex** `$A$` **etex**, z_1);
label *top*(**btex** `$B$` **etex**, z_2);
label *lrt*(**btex** `$C$` **etex**, z_3);
label *urt*(**btex** `$M$` **etex**, z_4);
endfig;

beginfig(120);
$z_1 = (-u, .5u)$;
$z_2 = (1.5u, 3.5u)$;
$z_3 = (2.2u, 2u)$;
$z_4 = z_1$ shifted $(3u, 0)$;
$z_5 = (z_2$ rotatedaround$(z_1, 90))$ shifted $(3u, 0)$;
$z_6 = (z_3$ rotatedaround$(z_1, 90))$ shifted $(3u, 0)$;
$z_{12} = whatever[z_1, z_2] = whatever[z_4, z_5]$;
$z_{21} = whatever[z_1, z_2] = whatever[z_4, z_6]$;
$z_{13} = whatever[z_1, z_3] = whatever[z_4, z_5]$;
$z_{31} = whatever[z_1, z_3] = whatever[z_4, z_6]$;
path p;
$p = z_{12}$ -- z_{21} -- z_{31} -- z_{13} -- cycle;
tr(p, 45);
draw z_2 -- z_1 -- z_3;
draw z_5 -- z_4 -- z_6;
label *lft*(**btex** `$A$` **etex**, z_{12});
label *rt*(**btex** `$B$` **etex**, z_{21});
label *rt*(**btex** `$C$` **etex**, z_{31});
label *bot*(**btex** `$D$` **etex**, z_{13});
endfig;

beginfig(121);
$z_1 = (-u, .5u)$;
$z_2 = (1.5u, 3.5u)$;
$z_3 = (2.2u, 2u)$;
$z_4 = (3u, 0)$;
$z_5 = (u, 4u)$;
$z_6 = (u, -.5u)$;
$z_{12} = whatever[z_1, z_2] = whatever[z_5, z_6]$;
$z_{13} = whatever[z_1, z_3] = whatever[z_5, z_6]$;
$z_{14} = whatever[z_1, z_4] = whatever[z_5, z_6]$;

draw z_2 -- z_1 -- z_3;
draw z_1 -- z_4;
draw z_5 -- z_6;
mark_ang(z_3, z_1, z_2, $8pt$);
mark_ang(z_4, z_1, z_3, $6pt$);
mark_ang(z_2, z_{12}, z_5, $6pt$);
mark_ang(z_3, z_{13}, z_5, $6pt$);
mark_ang(z_4, z_{14}, z_5, $6pt$);
endfig;

beginfig(122);
$z_1 = (0, 0)$;
$z_2 = (3u, 0)$;
$z_3 = (1.5u, 2u)$;
$z_4 = .5[z_1, z_2]$;
draw z_1 -- z_2;
draw z_4 -- z_3;
mark_rt_angle(z_2, z_4, z_3);
mark_rt_angle(z_3, z_4, z_1);
draw_marked(z_1 -- z_3, 1);
draw_marked(z_3 -- z_2, 1);
label *llft*(**btex** `$A$` **etex**, z_1);
label *lrt*(**btex** `$A'$` **etex**, z_2);
label *llft*(**btex** `$C$` **etex**, z_4);
label *lrt*(**btex** `$C'$` **etex**, z_4);
label *ulft*(**btex** `$B$` **etex**, z_3);
label *urt*(**btex** `$B'$` **etex**, z_3);
endfig;

beginfig(123);
$z_1 = (0, 0)$;
$z_2 = (3u, 0)$;
$z_3 = (1.5u, 2u)$;
$z_4 = .5[z_1, z_2]$;
draw z_1 -- z_3 -- z_2 -- cycle;
draw z_4 -- z_3;
label *bot*(**btex** `$x$` **etex**, $.5[z_1, z_4]$);
label *bot*(**btex** `$x$` **etex**, $.5[z_4, z_2]$);
label *lft*(**btex** `$2x$` **etex**, $.5[z_1, z_3]$);
label *rt*(**btex** `$2x$` **etex**, $.5[z_3, z_2]$);
endfig;

beginfig(124);
$z_1 = (0, 0)$;
$z_2 = (3u, 0)$;
$z_3 = (1.5u, 2u)$;
$z_4 = .5[z_1, z_2]$;
draw z_1 -- z_3 -- z_2 -- cycle;
draw z_4 -- z_3;
mark_ang(z_1, z_3, z_4, $6pt$);
mark_ang(z_4, z_3, z_2, $8pt$);
label *bot*(**btex** `$30$` **etex**, z_3 shifted $(-.4u, -.8u)$);
label *bot*(**btex** `$30$` **etex**, z_3 shifted $(.4u, -.8u)$);
endfig;

beginfig(125);
$z_1 = (0, 0)$;
$z_2 = (.5u, 2u)$;
path p, q;
pair d;
$p = ((z_1$ -- $z_2)$ scaled 1.5);
draw p shifted $(-.1u, -.5u)$;
draw p shifted $(2.9u, -.5u)$;
$q = ((z_1$ -- $(3u, 0))$ scaled 1.5);
draw q shifted $(-.7u, 0)$;
draw q shifted $(-.2u, 2u)$;
pickup pencircle scaled $.14u$;
parallelogram$(d, z_1, z_2)((3u, 0))$;
endfig;

beginfig(126);
$z_1 = (0, 0)$;
$z_2 = (.5u, 2u)$;
path p, q;
pair d;
$p = ((z_1$ -- $z_2)$ scaled 1.5);
draw p shifted $(-.1u, -.5u)$;
draw p shifted $(2.9u, -.5u)$;
$q = ((z_1$ -- $(3u, 0))$ scaled 1.5);
draw q shifted $(-.7u, 0)$;
draw q shifted $(-.2u, 2u)$;
pickup pencircle scaled $.14u$;
parallelogram$(d, z_1, z_2)((3u, 0))$;
pickup pencircle scaled *penthick*;
mark_ang$(d, z_1, z_2,$ *angle_radius*$)$
endfig;

beginfig(133);
$z_1 = (0, 0)$;
$z_2 = (2u, u)$;
$z_3 = (3u, 0)$;
$z_4 = z_1$ shifted $(.5u, 2u)$;
$z_5 = z_2$ shifted $(.5u, 2u)$;
$z_6 = z_3$ shifted $(.5u, 2u)$;
draw z_1 -- z_4 -- z_5 -- z_6 -- z_3 -- z_2 -- cycle;
draw z_2 -- z_5;
draw z_1 -- z_3 **dashed** *evenly*;
draw z_4 -- z_6 **dashed** *evenly*;
label *llft*(**btex** `$A$` **etex**, z_1);
label *ulft*(**btex** `$B$` **etex**, z_4);
label *top*(**btex** `$C$` **etex**, z_5);
label *bot*(**btex** `$D$` **etex**, z_2);
label *urt*(**btex** `$E$` **etex**, z_6);
label *lrt*(**btex** `$F$` **etex**, z_3);
endfig;

beginfig(136);
$z_1 = (0, 0)$;
$z_2 = (0, 2u)$;
$z_3 = (3u, 2u)$;

$z_4 = (3u, 0)$;
path p, q;
$p = z_1$ -- z_2 -- z_3 -- z_4 -- cycle;
draw p;
draw p shifted $(0, -3u)$;
draw z_1 -- z_3;
$q = (z_2$ -- $z_4)$ shifted $(0, -3u)$;
draw q;
endfig;

beginfig(137);
$z_1 = (0, 0)$;
$z_2 = (0, 2u)$;
$z_3 = (3u, 0)$;
$z_4 = .5[z_2, z_3]$;
path p;
$p = z_1$ -- z_2 -- z_3 -- cycle;
draw p;
draw z_1 -- z_4;
draw_marked$(z_2$ -- $z_4, 1)$;
draw_marked$(z_4$ -- $z_3, 1)$;
endfig;

beginfig(138);
$z_1 = (0, 0)$;
$z_2 = (0, 2u)$;
$z_3 = (3u, 0)$;
$z_4 = .5[z_2, z_3]$;
$z_5 = (3u, 2u)$;
path p;
$p = z_1$ -- z_2 -- z_3 -- cycle;
draw p;
draw z_1 -- z_4;
draw z_1 -- z_5;
draw z_2 -- z_5 -- z_3 **dashed** *evenly*;
draw_marked$(z_2$ -- $z_4, 1)$;
draw_marked$(z_4$ -- $z_3, 1)$;
draw_marked$(z_1$ -- $z_4, 2)$;
draw_marked$(z_4$ -- $z_5, 2)$;
endfig;

beginfig(139);
$z_1 = (0, 0)$;
$z_2 = (0, 3u)$;
$z_3 = (2u, 0)$;
$z_4 = .5[z_2, z_3]$;
path p;
$p = z_1$ -- z_2 -- z_3 -- cycle;
draw p;
drawarrow$(1.8u, 2u)$ .. z_4;
endfig;

beginfig(140);
$z_1 = (0, 0)$;
$z_2 = (0, 3u)$;

$z_3 = (2u, 0)$;
$z_4 = .5[z_2, z_3]$;
path p;
$p = z_1$ -- z_2 -- z_3 -- cycle;
draw p;
draw z_1 -- z_4;
draw_marked(z_2 -- z_4, 1);
draw_marked(z_4 -- z_3, 1);
draw_marked(z_1 -- z_4, 1);
endfig;

beginfig(141);
$z_1 = (0, u)$;
$z_2 = (3u, u)$;
$z_3 = (.5u, u)$;
$z_4 = (2.5u, u)$;
$z_5 = (.5u, 0)$;
$z_6 = (2.5u, 0)$;
draw z_1 -- z_2;
draw z_3 -- z_5 **dashed** *evenly*;
draw z_4 -- z_6 **dashed** *evenly*;
draw(z_1 -- z_2) shifted $(0, -u)$;
dotlabel(**btex** `$$` **etex**, z_3);
dotlabel(**btex** `$$` **etex**, z_4);
endfig;

beginfig(142);
$z_1 = (0, u)$;
$z_2 = (3u, u)$;
$z_3 = (.5u, u)$;
$z_4 = (2.5u, u)$;
$z_5 = (.5u, 0)$;
$z_6 = (2.5u, 0)$;
draw z_1 -- z_2 **dashed** *evenly*;
draw z_3 -- z_5;
draw z_4 -- z_6;
draw(z_1 -- z_2) shifted $(0, -u)$;
dotlabel(**btex** `$$` **etex**, z_3);
dotlabel(**btex** `$$` **etex**, z_4);
label *rt*(**btex** `$h$` **etex**, $.5[z_3, z_5]$);
label *rt*(**btex** `$h$` **etex**, $.5[z_4, z_6]$);
endfig;

beginfig(144);
$z_1 = (0, 0)$;
$z_2 = (1.5u, u)$;
$z_3 = (3u, 0)$;
$z_4 = (1.5u, -u)$;
draw z_1 -- z_2 -- z_3 -- z_4 -- cycle;
draw_marked(z_1 -- z_2, 1);
draw_marked(z_2 -- z_3, 1);
draw_marked(z_3 -- z_4, 1);
draw_marked(z_4 -- z_1, 1);
endfig;

beginfig(145);
$z_1 = (0, 0)$;
$z_2 = (1.5u, u)$;
$z_3 = (3u, 0)$;
$z_4 = (1.5u, -u)$;
draw z_1 -- z_2 -- z_3 -- z_4 -- cycle;
draw z_1 -- z_3;
draw z_2 -- z_4;
endfig;

beginfig(146);
$z_1 = (0, 0)$;
$z_2 = (0, 2u)$;
$z_3 = (2u, 2u)$;
$z_4 = (2u, 0)$;
draw z_1 -- z_2 -- z_3 -- z_4 -- cycle;
draw_marked(z_1 -- z_2, 1);
draw_marked(z_2 -- z_3, 1);
draw_marked(z_3 -- z_4, 1);
draw_marked(z_4 -- z_1, 1);
mark_rt_angle(z_4, z_1, z_2);
mark_rt_angle(z_1, z_2, z_3);
mark_rt_angle(z_2, z_3, z_4);
mark_rt_angle(z_3, z_4, z_1);
endfig;

beginfig(147);
$z_1 = (0, 0)$;
$z_2 = (0, 2u)$;
$z_3 = (2u, 2u)$;
$z_4 = (2u, 0)$;
draw z_1 -- z_2 -- z_3 -- z_4 -- cycle;
draw z_1 -- z_3;
endfig;

beginfig(148);
$z_1 = (0, 0)$;
$z_2 = (0, 2u)$;
$z_3 = (1.5u, 2u)$;
$z_4 = (1.5u, 0)$;
$z_5 = (0, 2.5u)$;
$z_6 = (2u, 0)$;
draw z_1 -- z_2 -- z_3 -- z_4 -- cycle;
draw z_2 -- z_5;
draw z_4 -- z_6;
label *lft*(**btex** `$Q$` **etex**, z_2);
label *urt*(**btex** `$X$` **etex**, z_3);
label *bot*(**btex** `$P$` **etex**, z_4);
endfig;

beginfig(149);
path p, q, e;
$p =$ *fullcircle* scaled $2u$;
$q = p$ shifted $(1.5u, 0)$;
$z_1 = p$ intersectionpoint q;

e = **subpath**(7, 8) **of** p;
$z_2 = e$ intersectionpoint q;
$z_3 = (0, 0)$;
$z_4 = z_3$ shifted $(1.5u, 0)$;
draw z_3 -- z_1 -- z_4 -- z_2 -- cycle **dashed** *evenly*;
draw p;
draw q;
pickup pencircle scaled $0.14u$;
dotlabel(**btex** `$$` **etex**, z_1);
dotlabel(**btex** `$$` **etex**, z_2);
dotlabel(**btex** `$$` **etex**, z_3);
dotlabel(**btex** `$$` **etex**, z_4);
endfig;

beginfig(151);
$z_{11} = (-.5u, 0)$;
$z_{22} = (4u, 0)$;
$z_{33} = z_{11}$ shifted $(0, 2u)$;
$z_{44} = z_{22}$ shifted $(0, 2u)$;
$z_1 = (0, .2u)$; $z_2 = z_1$ shifted $(u, 2u)$; $z_3 = z_2$ shifted $(2u, -u)$; $z_4 = z_1$ shifted $(2u, -u)$;
$z_5 = whatever[z_1, z_2] = whatever[z_{33}, z_{44}]$;
$z_6 = whatever[z_2, z_3] = whatever[z_{33}, z_{44}]$;
$z_7 = whatever[z_3, z_4] = whatever[z_{11}, z_{22}]$;
$z_8 = whatever[z_1, z_4] = whatever[z_{11}, z_{22}]$;
$z_9 = whatever[z_5, z_7] = whatever[z_6, z_8]$;
draw z_{11} -- z_{22};
draw z_{33} -- z_{44};
draw z_1 -- z_2 -- z_3 -- z_4 -- cycle;
draw z_5 -- z_7;
draw z_6 -- z_8;
mark_ang(z_8, z_9, z_7, *angle_radius*);
pickup pencircle scaled $.14u$;
dotlabel(**btex** `$$` **etex**, z_5);
dotlabel(**btex** `$$` **etex**, z_6);
dotlabel(**btex** `$$` **etex**, z_7);
dotlabel(**btex** `$$` **etex**, z_8);
dotlabel(**btex** `$$` **etex**, z_9);
label *bot*(**btex** `$45$` **etex**, z_9 shifted $(0, -.5u)$);
endfig;

beginfig(152);
$z_1 = (0, 0)$;
$z_2 = (2u, 0)$;
$z_3 = z_2$ rotated 60;
draw z_1 -- z_2 -- z_3 -- cycle;
mark_ang(z_2, z_1, z_3, *angle_radius*);
mark_ang(z_3, z_2, z_1, *angle_radius*);
mark_ang(z_1, z_3, z_2, *angle_radius*);
draw_marked(z_1 -- z_2, 1);
draw_marked(z_2 -- z_3, 1);
draw_marked(z_1 -- z_3, 1);
endfig;

beginfig(153);
path p;

p = *fullcircle* scaled $4u$;
draw p;
dotlabel(**btex** `$$` **etex**, (0, 0));
endfig;

beginfig(154);
z_1 = (0, 0);
z_2 = ($2u$, 0);
z_3 = z_2 rotated 60;
path p, q, e, f;
q = z_1 -- z_2 -- z_3 -- cycle;
p = *fullcircle* scaled $4u$;
z_4 = p intersectionpoint q;
e = **subpath**(1, 2) **of** p;
f = **subpath**(7.5, 10) **of** p;
z_5 = e intersectionpoint q;
draw f;
draw q;
label *bot*(**btex** `$r$` **etex**, .5[z_1, z_2]);
label *llft*(**btex** `$r$` **etex**, .5[z_2, z_3]);
label *ulft*(**btex** `$r$` **etex**, .5[z_1, z_3]);
pickup pencircle scaled $0.14u$;
dotlabel(**btex** `$$` **etex**, z_1);
dotlabel(**btex** `$$` **etex**, z_2);
dotlabel(**btex** `$$` **etex**, z_3);
endfig;

beginfig(155);
z_1 = (0, 0);
z_2 = (0, $2u$);
z_3 = z_2 shifted ($3u$, 0);
z_4 = z_1 shifted ($3u$, 0);
z_5 = z_2 shifted (u, u);
z_6 = z_3 shifted (u, u);
z_7 = z_4 shifted (u, u);
draw z_1 -- z_2 -- z_3 -- z_4 -- cycle;
draw z_2 -- z_5 -- z_6 -- z_3;
draw z_6 -- z_7 -- z_4 -- z_6 -- z_2 -- z_4;
endfig;

beginfig(156);
z_1 = (0, 0);
z_2 = (0, $2u$);
z_3 = z_2 shifted ($3u$, 0);
z_4 = z_1 shifted ($3u$, 0);
z_5 = z_2 shifted (u, u);
z_6 = z_3 shifted (u, u);
z_7 = z_4 shifted (u, u);
draw z_1 -- z_2 -- z_3 -- z_4 -- cycle;
draw z_2 -- z_5 -- z_6 -- z_3;
draw z_2 -- z_4 -- z_6 -- z_7 -- z_4 -- z_6;
draw z_2 -- z_6 **dashed** *evenly*;
endfig;

beginfig(157);

$z_1 = (0, 0)$;
$z_2 = (0, 2.5u)$;
$z_3 = z_2$ shifted $(2.5u, 0)$;
$z_4 = z_1$ shifted $(2.5u, 0)$;
$z_5 = z_4$ rotated 30;
draw z_1 -- z_2 -- z_3 -- z_4 -- cycle;
draw z_2 -- z_5 -- z_1;
draw z_3 -- z_5 -- z_4 **dashed** *evenly*;
label *llft*(**btex** `$A$` **etex**, z_1);
label *ulft*(**btex** `$B$` **etex**, z_2);
label *urt*(**btex** `$C$` **etex**, z_3);
label *lrt*(**btex** `$D$` **etex**, z_4);
label *lft*(**btex** `$M$` **etex**, z_5 shifted $(-.2u, 0)$);
draw_marked(z_1 -- z_2, 1);
draw_marked(z_2 -- z_3, 1);
draw_marked(z_3 -- z_4, 1);
draw_marked(z_4 -- z_1, 1);
draw_marked(z_1 -- z_5, 1);
draw_marked(z_2 -- z_5, 1);
endfig;

beginfig(158);
$z_1 = (0, 0)$;
$z_2 = (0, 2.5u)$;
$z_3 = z_2$ shifted $(2.5u, 0)$;
$z_4 = z_1$ shifted $(2.5u, 0)$;
$z_5 = (1.25u, 0)$ rotated 75;
draw z_1 -- z_2 -- z_3 -- z_4 -- cycle;
draw z_2 -- z_5 -- z_1;
draw z_3 -- z_5 -- z_4 **dashed** *evenly*;
label *llft*(**btex** `$A$` **etex**, z_1);
label *ulft*(**btex** `$B$` **etex**, z_2);
label *urt*(**btex** `$C$` **etex**, z_3);
label *lrt*(**btex** `$D$` **etex**, z_4);
label *rt*(**btex** `$?L$` **etex**, z_5 shifted $(.5u, 0)$);
mark_ang(z_5, z_1, z_2, *angle_radius*);
mark_ang(z_1, z_2, z_5, *angle_radius*);
mark_ang(z_4, z_5, z_3, *angle_radius*);
endfig;

beginfig(159);
$z_1 = (0, 0)$;
$z_2 = (3u, 0)$;
$z_3 = z_2$ rotated 60;
$z_4 = 2/3[z_1, z_2]$;
$z_5 = 2/3[z_2, z_3]$;
$z_6 = 2/3[z_3, z_1]$;
draw z_1 -- z_2 -- z_3 -- cycle;
draw z_4 -- z_5 -- z_6 -- cycle **dashed** *evenly*;
endfig;

beginfig(160);
$z_1 = (0, 0)$;
$z_2 = (3u, 0)$;

$z_3 = (2u, 2.5u)$;
$z_4 = .5[z_1, z_2]$;
$z_5 = .5[z_2, z_3]$;
$z_6 = .5[z_3, z_1]$;
draw z_1 -- z_2 -- z_3 -- cycle;
draw z_4 -- z_5 -- z_6 **dashed** *evenly*;
label *llft*(**btex** `$A$` **etex**, z_1);
label *ulft*(**btex** `$B$` **etex**, z_3);
label *lrt*(**btex** `$C$` **etex**, z_2);
label *urt*(**btex** `$M$` **etex**, z_5);
endfig;

beginfig(161);
$z_1 = (0, 0)$;
$z_2 = (3u, 0)$;
$z_3 = (2u, 2.5u)$;
$z_4 = .5[z_1, z_2]$;
$z_5 = .5[z_2, z_3]$;
$z_6 = .5[z_3, z_1]$;
draw z_1 -- z_2 -- z_3 -- cycle;
draw z_4 -- z_5 -- z_6;
label *llft*(**btex** `$A$` **etex**, z_1);
label *ulft*(**btex** `$B$` **etex**, z_3);
label *lrt*(**btex** `$C$` **etex**, z_2);
label *urt*(**btex** `$M$` **etex**, z_5);
label *ulft*(**btex** `$K$` **etex**, z_6);
label *bot*(**btex** `$L$` **etex**, z_4);
mark_ang(z_1, z_3, z_2, $4pt$);
mark_ang(z_4, z_5, z_2, $4pt$);
mark_angtwice(z_3, z_5, z_6, $4pt$);
mark_angtwice(z_3, z_2, z_1, $4pt$);
draw_marked(z_3 -- z_5, 1);
draw_marked(z_5 -- z_2, 1);
endfig;

beginfig(163);
$z_1 = (0, 0)$;
$z_2 = (3u, 0)$;
$z_3 = (u, 2.5u)$;
$z_4 = .5[z_1, z_2]$;
$z_5 = .5[z_2, z_3]$;
$z_6 = .5[z_3, z_1]$;
draw z_1 -- z_2 -- z_3 -- cycle;
draw z_4 -- z_5 -- z_6 -- cycle;
endfig;

beginfig(164);
$z_1 = (0, 0)$;
$z_2 = (.5u, 2u)$;
$z_3 = (3u, 1.5u)$;
$z_4 = (3.5u, -1.5u)$;
$z_5 = .5[z_1, z_2]$;
$z_6 = .5[z_2, z_3]$;
$z_7 = .5[z_3, z_4]$;
$z_8 = .5[z_4, z_1]$;

draw z_1 -- z_2 -- z_3 -- z_4 -- cycle;
draw z_5 -- z_6 -- z_7 -- z_8 -- cycle **dashed** *evenly*;
draw z_1 -- z_3;
draw z_2 -- z_4;
endfig;

beginfig(165);
$z_1 = (0, 0)$;
$z_2 = (u, 2.5u)$;
$z_3 = (2u, 0)$;
$z_4 = (u, -2.5u)$;
$z_{12} = .5[z_1, z_2]$;
$z_{23} = .5[z_2, z_3]$;
$z_{34} = .5[z_3, z_4]$;
$z_{41} = .5[z_4, z_1]$;
$z_{11} = (0, 2.5u)$; $z_{22} = (2u, 2.5u)$; $z_{33} = (2u, -2.5u)$; $z_{44} = (0, -2.5u)$;
$z_5 = (u, -5u)$; $z_6 = z_5$ shifted $(0, 2u)$; $z_7 = z_6$ shifted $(2u, 0)$; $z_8 = z_5$ shifted $(2u, 0)$;
$z_{56} = .5[z_5, z_6]$;
$z_{67} = .5[z_6, z_7]$;
$z_{78} = .5[z_7, z_8]$;
$z_{85} = .5[z_8, z_5]$;
path p, q;
$p = z_1$ -- z_2 -- z_3 -- z_4 -- cycle;
$q = (z_{11}$ -- z_{22} -- z_{33} -- z_{44} -- cycle) shifted $(3u, 0)$;
draw p;
draw z_{12} -- z_{23} -- z_{34} -- z_{41} -- cycle **dashed** *evenly*;
draw p shifted $(3u, 0)$ **dashed** *evenly*;
draw q;
draw z_5 -- z_6 -- z_7 -- z_8 -- cycle;
draw z_{56} -- z_{67} -- z_{78} -- z_{85} -- cycle **dashed** *evenly*;
endfig;
end