HW91

1. a) $\sqrt{(8-2)^2+(13-5)^2} = \sqrt{36+64}$
$= 10$

b) $\sqrt{(5-0)^2+(10-3)^2} = \sqrt{25+49}$
$= \sqrt{74}$

c) $\sqrt{(-2+4)^2+(-3-6)^2} = \sqrt{4+81}$
$= \sqrt{85}$

d) $\sqrt{(-6-3)^2+(3d-0)} = \sqrt{81+4d^2}$

3. a) $(x-1)^2+(y+1)^2 = 9$

b) $(x+2)^2 + y^2 = 25$

c) $\sqrt{(x-1)^2+(y-2)^2} = \sqrt{(x-5)^2+(y-7)^2}$

$(x-1)^2 + (y-2)^2 = (x-5)^2+(y-7)^2$

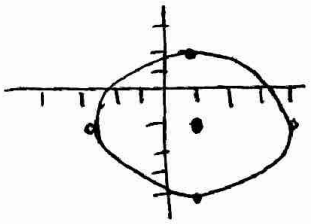
$x^2-2x+1+y^2-4y+4 = x^2-10x+25+y^2-14y+49$

$8x+5-4y = 74-14y$

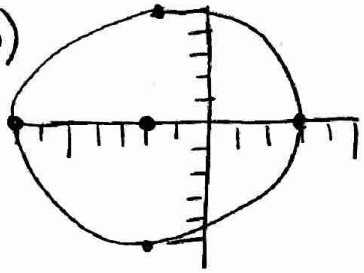
$8x-69 = -10y$

$\boxed{-0.8x+6.9 = y}$

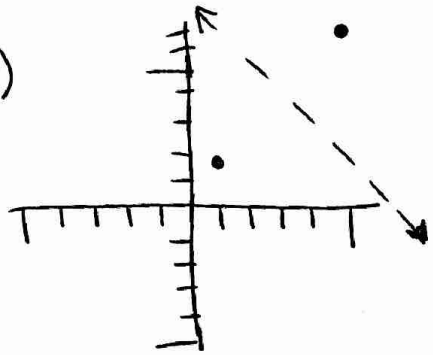
2. a)



b)



c)



4. $5 = \sqrt{(5-2)^2+(y-7)^2}$

$5 = \sqrt{9+(y-7)^2}$

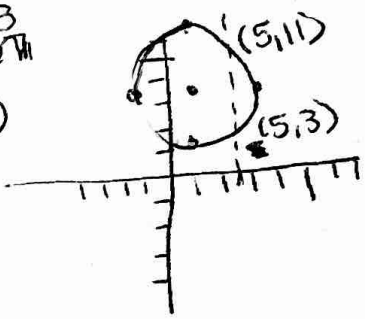
$25 = 9+(y-7)^2$

$16 = y^2-14y+49$

$0 = y^2-14y+33$

$0 = (y-11)(y-3)$

$y = 11, y = 3$



5. $47 = \sqrt{(x+1)^2+(-2-5)^2}$

$47 = \sqrt{(x+1)^2+49}$

$2209 = (x+1)^2+49$

$2209 = x^2+2x+1+49$

$0 = x^2+2x-2159$

9. a) y is the field distance

$y^2 = 2^2+x^2$

$y = \sqrt{4+x^2}$

z is the road distance

$z = 3-x$

b) y time is $\frac{\sqrt{4+x^2}}{9}$

z time is $\frac{3-x}{22}$

$T = \frac{\sqrt{4+x^2}}{9} + \frac{3-x}{22}$

$x = 0.897$, $T = 0.34$

$= 20$ min.

p459

1. sketches not included
   a) $C(0,0)$ $r=2$
   b) $C(3,0)$ $r=1$
   c) $C(-1,2)$ $r=3$
   d) $C(0,1.5)$ $r=\frac{1}{2}$
   e) $C(1,2)$ $r=2$
   f) $C(-3,0)$ $r=4$

2. a) $(x-3)^2+y^2=25$
   b) $(x+1)^2+(y-2)^2=9$
   c) $(x-2.5)^2+(y-0.75)^2=16$
   d) $(x-2.5)^2+(y-1.25)^2=0.25$

3. a) $(x-2)^2+(y+3)^2=25$
   b) $(x-1)^2+y^2=49$
   c) $(x+4)^2+(y+2)^2=0.09$