$(x-0)^2+(y-0)^2=400$

Find the center and the radius of the circle.

$x^2+y^2=16x$ $\quad x^2-16x \quad +y^2 =$

To find the center and the radius, complete the square and then write the equation in standard form.

$(x-h)^2+(y-k)^2=r^2$

$x^2+Ax+y^2+Cy=D$ is a circle IF the RHS ends up positive after completing the square.

Regroup the terms.

$(x^2-16x)+y^2=0$

First complete the square for x^2-16x.

What do you need to add in order to complete the square? 64 Fantastic!

To complete the square, add and subtract 64 inside the first set of parentheses.

$(x^2+16x+64-64)+y^2=0$ WRONG!

$y^2=(y-0)^2$

$(x+8)^2=(x-(-8))^2$

$(x-h)^2$

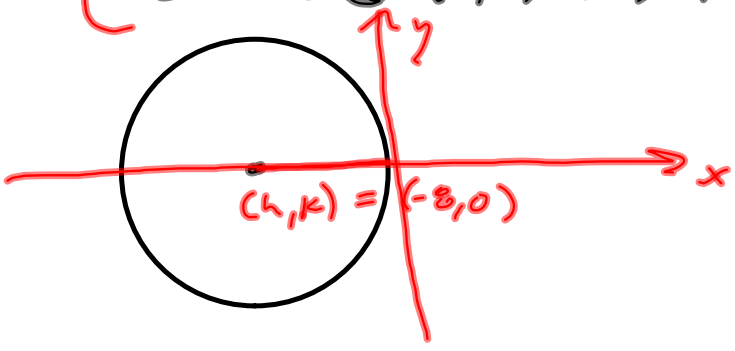
OK

$x^2+16x+8^2+y^2=0+64$

$(x+8)^2+y^2=64$

Circle of radius $r=8$

centered @ $(h,k)=(-8,0)$



Circle is set of all $P(x,y)$ points equidistant from a fixed point.

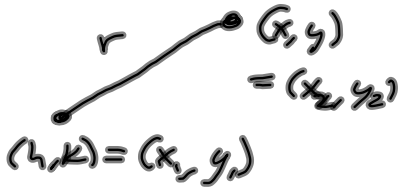
$Q(h,k)$

r

$D(P,Q) = r$

$\sqrt{(x-h)^2 + (y-k)^2} = r$

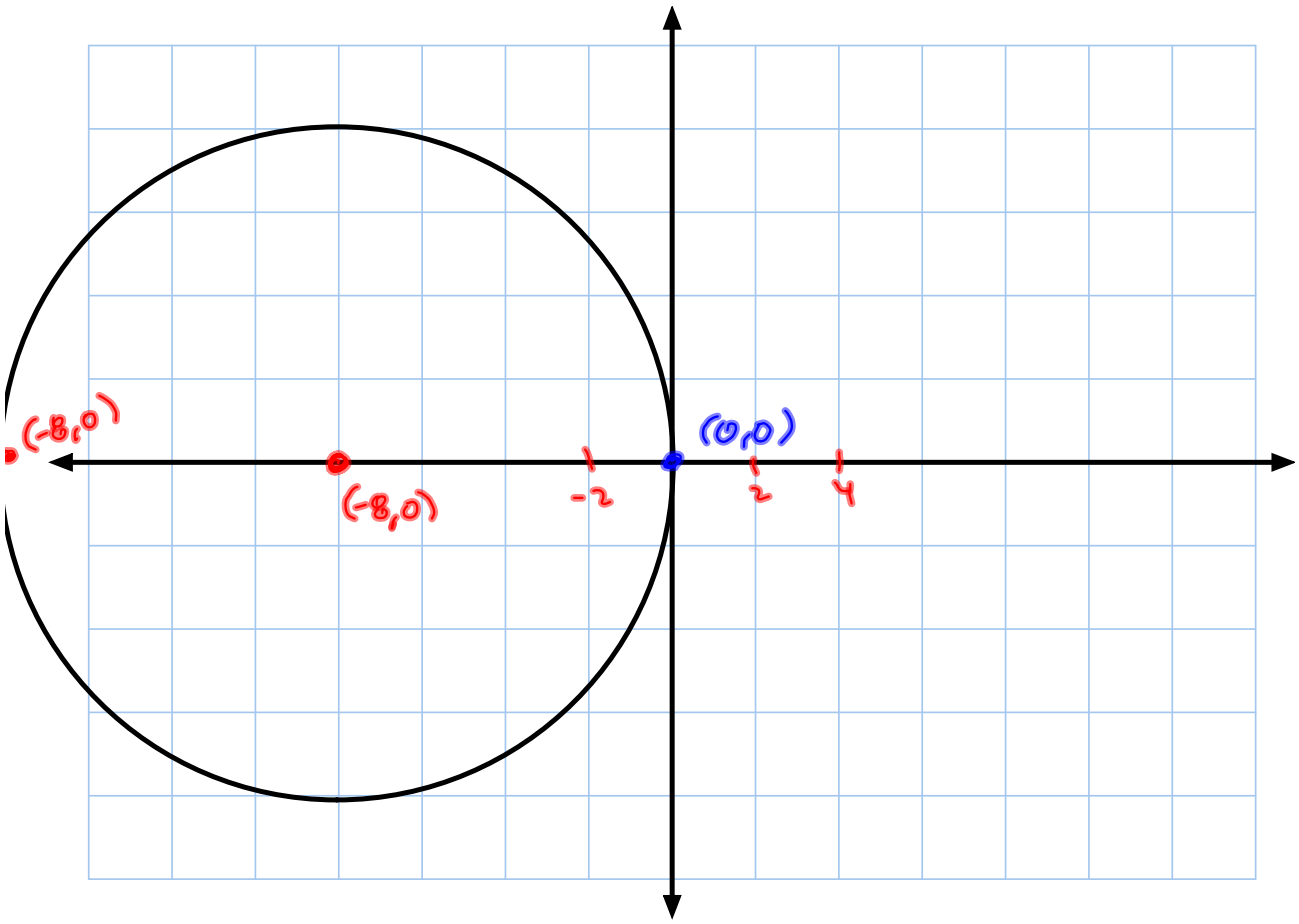
$\left(\sqrt{(x-h)^2 + (y-k)^2}\right)^2 = r^2$



$(x-h)^2 + (y-k)^2 = r^2$ is eqn of circle centered @ (h,k) of radius r.

$(x-8)^2 + (y-0)^2 = 8^2$

$(h,k) = (8,0)$, $r = 8$



Aug 23-8:04 AM

$(x+b)^2 = (x+b)(x+b) = x^2+2bx+b^2$

$x^2+cx+\square = (x+?)^2$

$x^2+2bx+b^2 = (x+b)^2$

$x^2+16x+8^2 = (x+8)^2$

$16 = 2b$

$8 = b \rightsquigarrow b^2 = 8^2$

Clay on Practice Tests

Piecewise Linear Curve

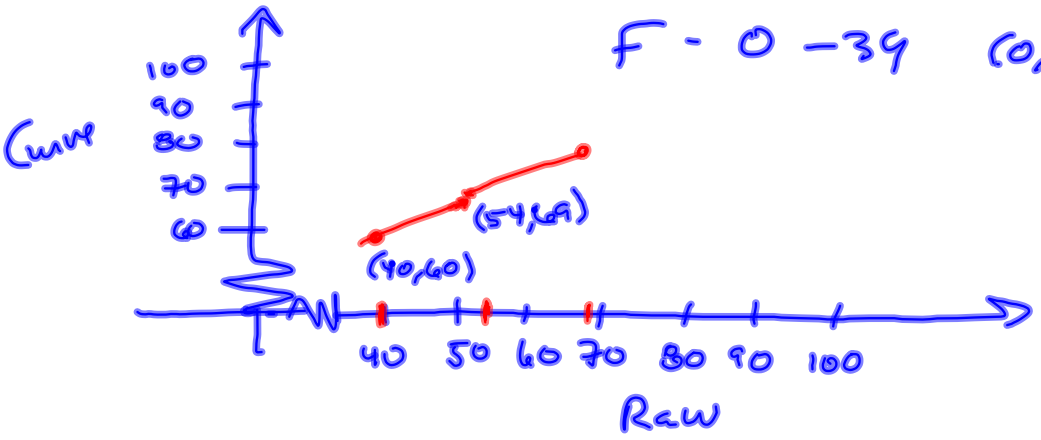
A - 85 - 100 (85, 90), (100, 100)

B - 70 - 84 (70, 80), (84, 89)

C - 55 - 69 (55, 70), (69, 79)

D - 40 - 54 (40, 60), (54, 69)

F - 0 - 39 (0, 0), (39, 59)



$$m = \frac{y_2 - y_1}{x_2 - x_1} = \frac{69 - 60}{54 - 40} = \frac{9}{14} = m$$

$$y = m(x - x_1) + y_1$$

$$y = \frac{9}{14}(x - 40) + 60$$

Curve formula for a grade (RAW) between 40 & 60 on Practice Test.

#22 Method: get y's on one side; factor; Divide

Solve $5-2y=4+3xy$ for y

$-3xy-2y=-1$

$3xy+2y=1$

$y(3x+2)=1$

$\frac{y(3x+2)}{3x+2}=\frac{1}{3x+2}$

$y=\frac{1}{3x+2}$

$3xy=1-2y$

$x=\frac{1-2y}{3y}=\frac{(\frac{1}{y}-2)y}{3y}$

29 $m = \frac{y_2 - y_1}{x_2 - x_1}$.

$y = m(x - x_1) + y_1$, My version of point-slope

Hint: Let x = # of years after 1997, i.e.,

$x = \text{Year} - 1997$ #30 is $1.5

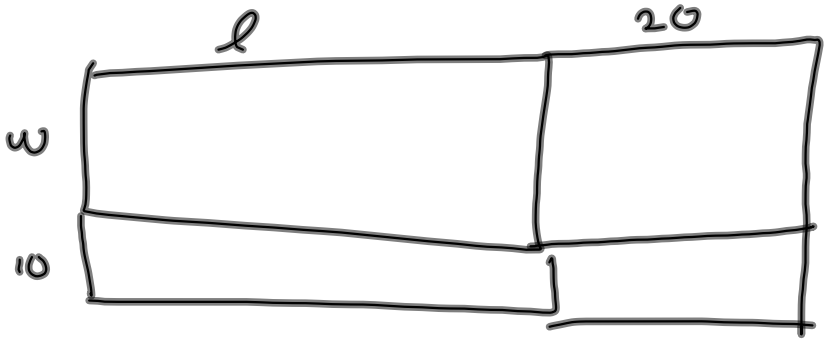
$1997 \longmapsto 0 = x_1$

$2015 - 1997 = 18$

$y = f(x)$ = price as linear function of the years

(27) Jerry's Patio is SQUARE!

Expand length by 20ft & width by 10 ft & area is 999 ft²



$(w+10)(\ell+20) = 999$

$(w+10)(w+20) = 999$ is the setup.

$w^2+30w+200 = 999$

$w^2+30w+15^2 = 799+225$

$(w+15)^2 = 1024$

$(w+15)^2 = 2^{10}$

2 | 1024
2 | 512
2 | 256
2 | 128
2 | 64
2 | 32
2 | 16
2 | 8
2 | 4
2

$w+15 = \pm\sqrt{2^{10}} = \pm(2^{10})^{\frac{1}{2}}$

$= \pm 2^5 = \pm 32$