65.

$h(x) = (x+2)^4$

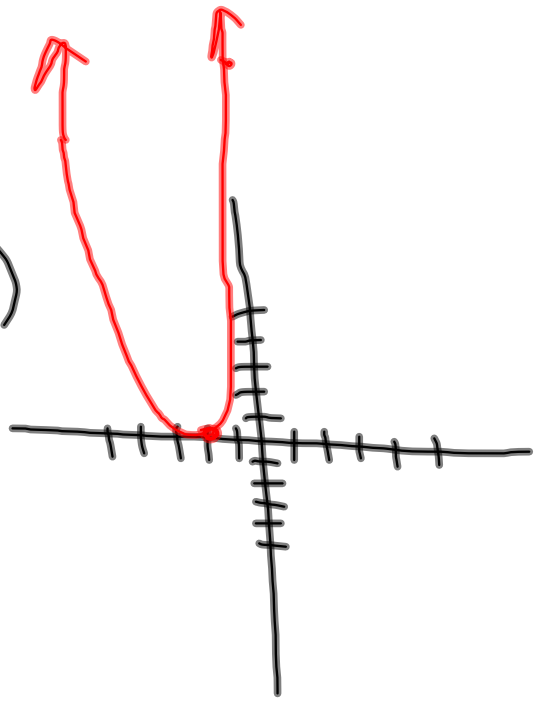
y-int

$h(0) = (0+2)^4$

$= 16$

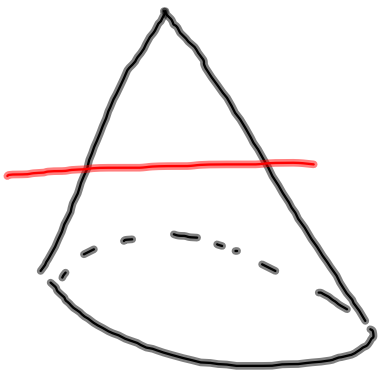
(0, 16)

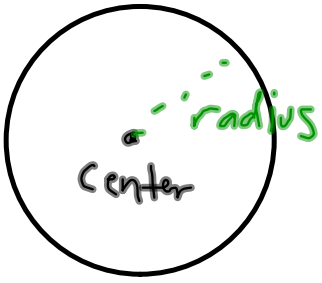
(-2, 0)



8.5 Circles

- all points (x, y) that are equidistant from a fixed point called the center. The distance, r, from the center to any point on the circle is called the radius.





Standard form of a circle centered at the origin is

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

Ex: Find the equation of a circle centered at the origin with radius of 4.

$$x^2+y^2=4^2$$

$$x^2+y^2=16$$

Ex: Find eqn circle origin contained $(3,-4)$.

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

$$(3)^2+(-4)^2=r^2$$

$$9+16=r^2$$

$$25=r^2$$

$$x^2+y^2=25$$

Standard form of a circle centered at (h,k) is

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

Ex: Find the equation of a circle centered $(1,-2)$ passing through $(1,0)$

$$(1-1)^2 + (0--2)^2 = r^2$$

$$0^2 + (2)^2 = r^2$$

$$0 + 4 = r^2$$

$$4 = r^2$$

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

$$\boxed{(x-1)^2 + (y+2)^2 = 4}$$

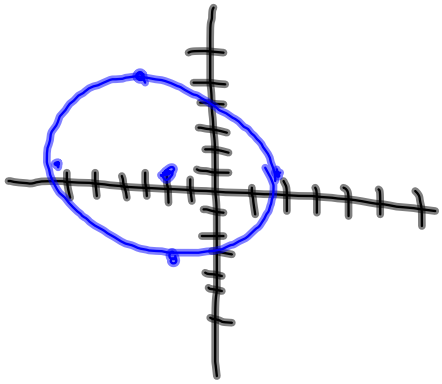
Ex: Find the center and radius of $(x+2)^2 + (y-1)^2 = 16$. Sketch a graph.

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

center: $(-2, 1)$

radius: $\sqrt{r^2} = \sqrt{16}$

$r = 4$



p. 544

2-36 even