

Warm Up: SAT workbook: 10.1: 1,3,5



Use the Pythagorean theorem to find the length of the missing side.

1. $a = 12, b = 9$

2. $a = 5, c = 13$

3. $b = 15, c = 17$

Find the mean of the two numbers.

4. 18 and 34

5. 18 and -34

FCAT: Alonzo trains for a marathon several times per week. He follows the same route each time. He starts his run from home by going 5 miles due east, then turning and going 3 miles due north, and then turning and going 1 mile due west. At this point in time, how many miles is Alonzo from home?



1. **Multiple Choice** What is the distance between $(-5, 2)$ and $(4, -8)$?

(A) 6.08

(B) 13.45

(C) 13.89

(D) 3.61

(E) 10.37





3. **Multiple Choice** What is the midpoint of the line segment connecting $(2, 7)$ and $(-8, 15)$?

- A $(3, 11)$ B $(-3, 11)$
 C $(3, -11)$ D $(11, 3)$
 E $(-11, -3)$



5. **Multiple Choice** Which equation represents the perpendicular bisector of the line segment connecting $(-7, 5)$ and $(2, -4)$?

- A $y = -x - 1$ B $y = -x - 3$
 C $y = x + 3$ D $y = x - 3$
 E $y = -x + 3$



10.2 Parabolas

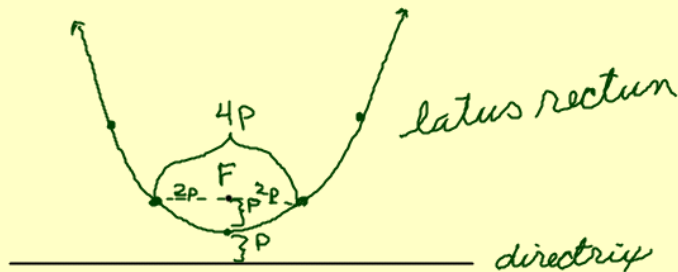
10.6p Graphing & Classifying Conics

$$y = ax^2 + bx + c$$

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

10.2-1

Definition: A **parabola** is the set of all points (x, y) that are equidistant from a **fixed line**, the **directrix**, and a **fixed point**, the **focus**.



Standard equation with vertex (h, k) :

Vertical axis

$$(x - h)^2 = 4p(y - k)$$

$p > 0$ U
 $p < 0$ ∩

Vertex (h, k)
eccentricity = 1

Horizontal axis

$$(y - k)^2 = 4p(x - h)$$

$p < 0$)
 $p > 0$ (

Graph and label vertex, focus, directrix, axis of symmetry, endpoints of the latus rectum, domain and range for:

$$(x-h)^2 = 4p(y-k)$$

1. $x^2 - 4x + 8y - 4 = 0$

2. $y^2 + 6y - 4x + 17 = 0$

$$x^2 - 4x + 4 = -8y + 4 + 4$$

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

$$(x-2)^2 = -8(y-1)$$

$$(x-2)^2 = 4(-2)(y-1)$$

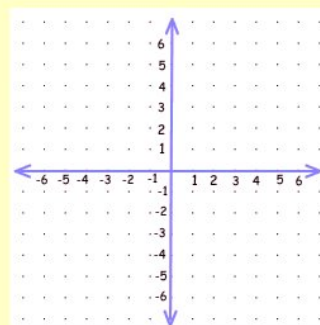
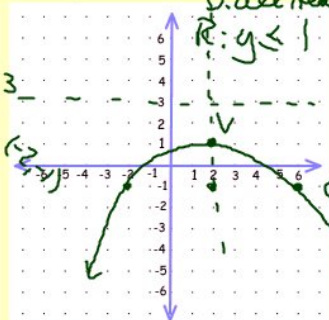
V(2,1) P = -2

F(2,-1) A: X=2

Dir: y=3

EOLR (6,-1)(-2,-1)

D: all Reals



Homework: 10.2 pg 598: 17-29 odd, 37,53,63,65,75,77,81,84

10.6P pg 628: 15, 16, 22, 28, 37graph, (45-50)A, 51, 61,70
pg 640: 1

$$\begin{aligned}17. \quad x^2 &= -4y \\ (x-0)^2 &= -4(y-0) \\ (x-0)^2 &= 4(-1)(y-0) \cap\end{aligned}$$

$$\begin{aligned}19. \quad y^2 &= -4x \\ (y-0)^2 &= 4(-1)(x-0) \\ & \cup\end{aligned}$$

$$\begin{aligned}21. \quad x^2 &= \frac{1}{4}y \\ (x-0)^2 &= 4\left(\frac{1}{16}\right)(y-0) \cup\end{aligned}$$

$$23. \quad -9x^2 = 2y$$
$$(x-0)^2 = \frac{2}{-9}(y-0)$$

37. F Dir

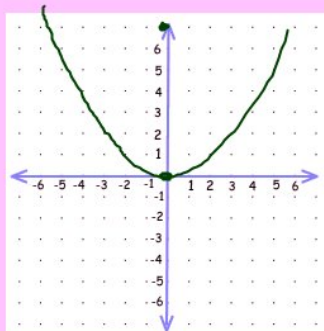
$$-28y + x^2 = 0$$

$$x^2 = 28y$$

$$(x-0)^2 = 4(7)(y-0)$$

F: (0, 7)

Dir $y = -7$



$$53. \quad x - \frac{1}{8}y^2 = 0$$

$$-\frac{1}{8}y^2 = -x$$

$$y^2 = 8x$$

$$(y-0)^2 = 4(2)(x-0)$$

