

Warm Up

1. Factor completely: $27m^2 - 3$

5/10/19

$$3(9m^2 - 1)$$

$$3(3m+1)(3m-1)$$

2. Write an equation for the following table in slope-intercept form.

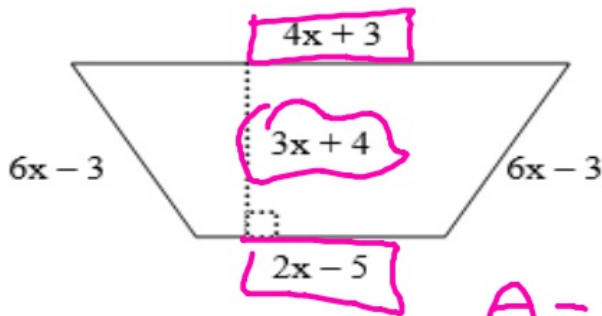
x	y
0	-8
2	-6

+2 < > +2

$$m=1 \quad b=-8$$

$$y=x-8$$

Find the perimeter and area of the figure:



$$P=18x-8$$

$$A = \frac{h(b_1+b_2)}{2}$$

$$A = \frac{(3x+4)(6x-2)}{2}$$

$$\frac{18x^2+18x-8}{2}$$

$$A = 9x^2 + 9x - 4$$

REVIEW

Identify all you can
from the graph:

Axis of Sym. $x=3$

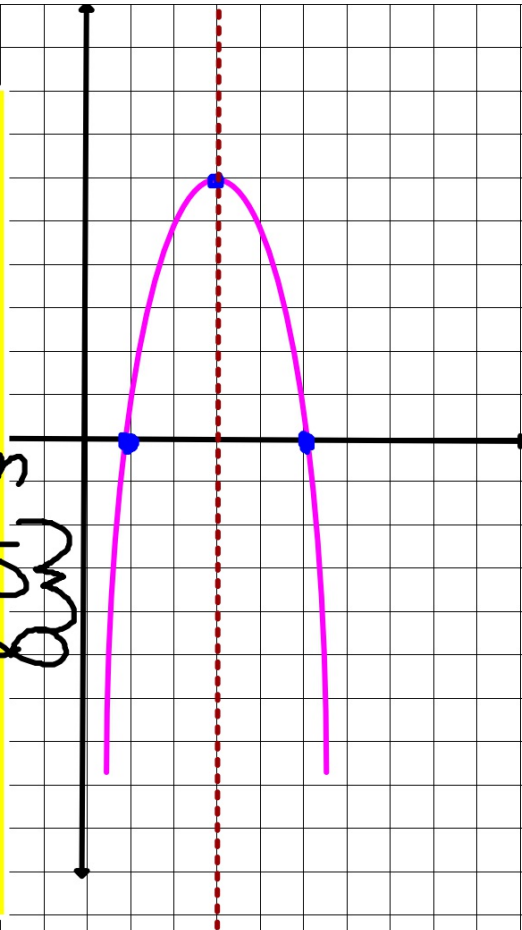
Vertex: $(3, 6)$

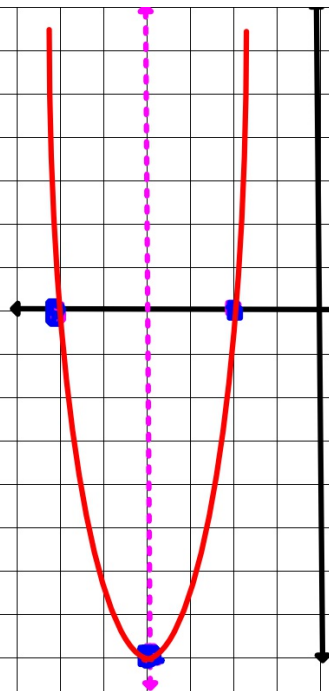
max/min: Maximum

Roots/zeros: $\{1, 5\}$

Domain: $-\infty \leq x \leq \infty$

Range: $y \leq 6$





A.O.S. $x = -4$
Vertex $(-4, -8)$
Minimum
Roots/zeros $\{-6, -2\}$
Domain: All \mathbb{R} #'s
Range: $y \geq -8$

Products of Consecutive Numbers

1. The product of two positive consecutive integers is 56. Find the integers.

$$\begin{array}{l} X \rightarrow 7 \\ X+1 \rightarrow 8 \end{array}$$

$$X(X+1) = 56$$

$$X^2 + X - 56 = 0$$

$$ac = -56$$
$$\begin{array}{r} -7 \\ 8 \end{array}$$

$$(X^2 - 7X)(8X - 56) = 0$$

$$X(X-7)8(X-7) = 0$$

$$(X+8)(X-7) = 0$$

$$X+8=0 \quad X-7=0$$

$$X=-8$$

$$X=7$$

2. The product of two negative consecutive odd integers is 99. Find the integers.

$$\begin{array}{l} X \rightarrow -11 \\ X+2 \rightarrow -9 \end{array} \quad \begin{array}{l} X(X+2) = 99 \\ X^2 + 2X - 99 = 0 \\ (X^2 - 9X)(11X - 99) = 0 \\ X(X-9)11(X-9) = 0 \\ (X+11)(X-9) \\ X+11=0 \quad X-9=0 \\ \boxed{X=-11} \quad X=9 \end{array}$$

$$\begin{array}{r} ac = -99 \\ -9 \overline{) 11} \end{array}$$

3. Find two consecutive positive even integers such that the square of the smaller is 10 more than the larger.

$$\begin{array}{l} X \rightarrow 4 \\ X+2 \rightarrow 6 \end{array}$$

$$X^2 = 10 + (X+2)$$

$$\begin{array}{r} X^2 = X + 12 \\ -X - 12 \quad -X \quad -12 \\ \hline \end{array}$$

$$X^2 - X - 12 = 0$$

$$ac = -12$$

$$\begin{array}{r} 3 \overline{) 4} \end{array}$$

$$(X^2 + 3X)(4X - 12) = 0$$

$$X(X+3) - 4(X+3) = 0$$

$$(X-4)(X+3) = 0$$

$$X-4=0$$

$$X+3=0$$

$$\boxed{X=4}$$

$$X=-3$$

4. The sum of ⁺a number ^x and ^{x²}its square ⁼is 20.
Find the number(s).

$$x^2 + x = 20$$

$$x^2 + x - 20 = 0$$

$$(x^2 + 5x - 4x - 20) = 0$$

$$x(x+5) - 4(x+5) = 0$$

$$(x-4)(x+5) = 0$$

$$x-4=0 \quad x+5=0$$

$$x=4 \quad x=-5$$

$$ac = -20$$
$$\begin{array}{r} 5 \overline{) -4} \end{array}$$

$$\boxed{4, -5}$$

You Try:

1. The product of two negative consecutive integers is 420. Find the integers.

-21,-20

$$x(x + 1) = 420$$

$$x^2 + x = 420$$

$$x^2 + x - 420 = 0$$

$$(x^2 + 21x)(-20x - 420) = 0$$

$$x(x + 21) - 20(x + 21) = 0$$

$$(x - 20)(x + 21) = 0$$

$$x - 20 = 0 \quad x + 21 = 0$$

$$x = 20 \quad x = -21$$

2. The product of two positive consecutive odd integers is 195. Find the integers.

3. The product of two positive consecutive even integers is 6 more than three times their sum. Find the integers.

**4. The sum of a number and its square is 72.
Find the number(s).**