

Name: \_\_\_\_\_

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1. Complete the square to convert the following quadratic from standard to vertex form.

$$y = \frac{3}{2}x^2 - 18x + 55$$

$$y = \left(\frac{3}{2}x^2 - 18x\right) + 55$$

$$y = \frac{3}{2}(x^2 - 12x) + 55$$

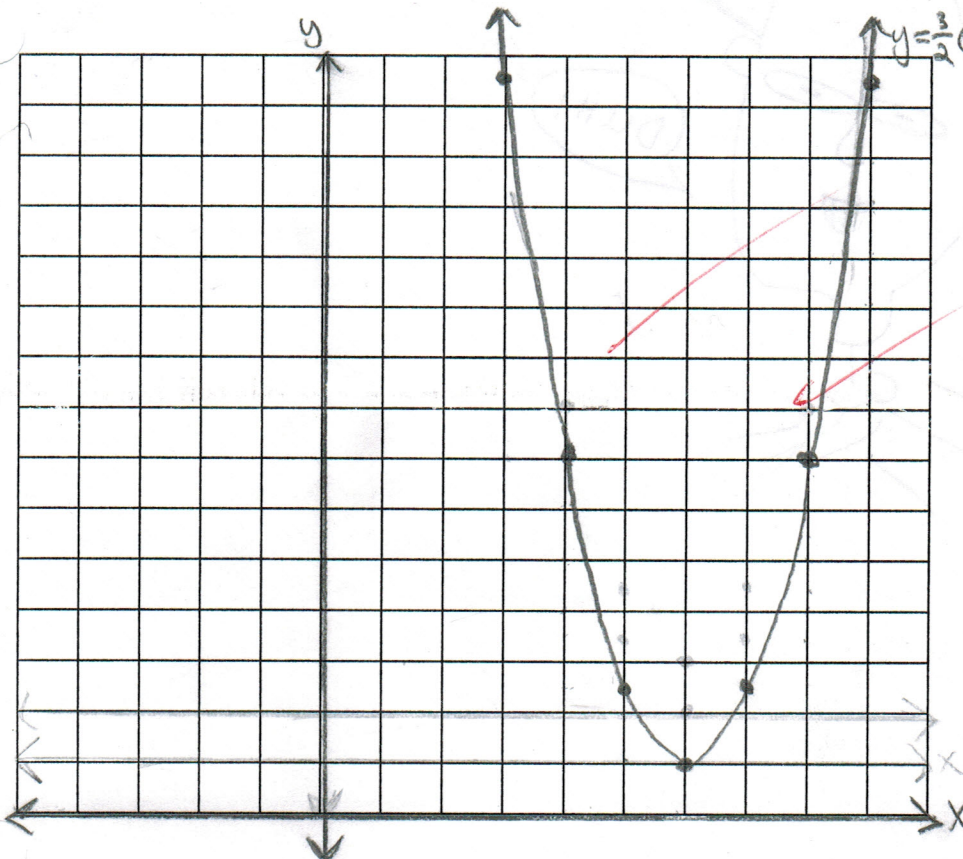
$$y = \frac{3}{2}(x^2 - 12x + 36 - 36) + 55$$

$$y = \frac{3}{2}(x^2 - 12x + 36) + 55 - 54$$

$$y = \frac{3}{2}(x-6)^2 + 1$$

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2. Graph the above function and state the following:



$$\begin{aligned} FD &= (1, 3, 5) \\ &= 1.5(1, 3, 5) \\ &= (1.5, 4.5, 7.5) \end{aligned}$$

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vertex:

(6, 1)

equation of aos:

 $x = 6$ 

opening:

up

optimum value:

Min,  $y = 1$ 

domain:

 $\{x \in \mathbb{R}\}$ 

range:

 $\{y \geq 1\}$