

NAME \_\_\_\_\_ DATE \_\_\_\_\_

ALGEBRA II WORKSHEET: GRAPHING IN INTERCEPT FORM

For each function, complete the following prompts and graph on the axes provided. Show your work on a separate sheet of paper.

1.  $y = (x + 4)(x - 6)$

Vertex \_\_\_\_\_

Axis of Symmetry \_\_\_\_\_

x-intercept \_\_\_\_\_

y-intercept \_\_\_\_\_

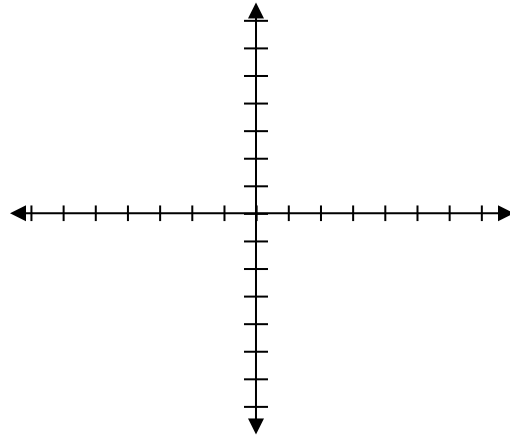
Concave Up or Down? \_\_\_\_\_

One Other Point on the Graph \_\_\_\_\_

Domain \_\_\_\_\_

Range \_\_\_\_\_

Increasing \_\_\_\_\_



2.  $y = 3(x - 1)(x - 4)$

Vertex \_\_\_\_\_

Axis of Symmetry \_\_\_\_\_

x-intercept \_\_\_\_\_

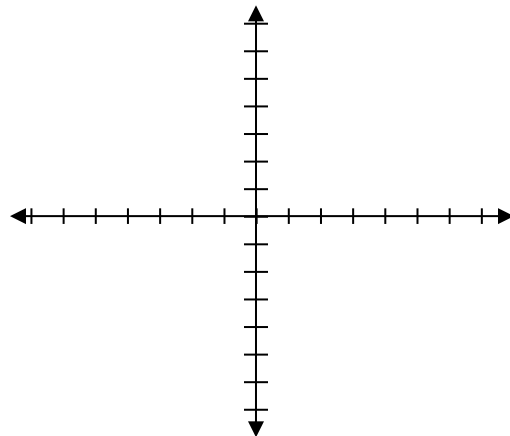
y-intercept \_\_\_\_\_

Concave Up or Down? \_\_\_\_\_

One Other Point on the Graph \_\_\_\_\_

Decreasing \_\_\_\_\_

Range \_\_\_\_\_



3.  $y = -2x(x - 5)$

Vertex \_\_\_\_\_

Axis of Symmetry \_\_\_\_\_

x-intercept \_\_\_\_\_

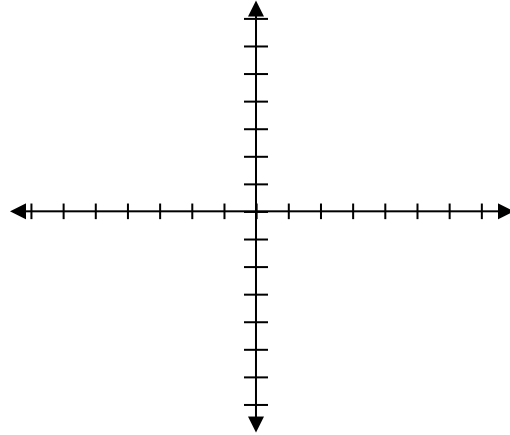
y-intercept \_\_\_\_\_

Concave Up or Down? \_\_\_\_\_

Two Other Points on the Graph \_\_\_\_\_

Increasing \_\_\_\_\_

Range \_\_\_\_\_



4.  $y = -(x + 6)\left(x - \frac{1}{2}\right)$

Vertex \_\_\_\_\_

Axis of Symmetry \_\_\_\_\_

x-intercept \_\_\_\_\_

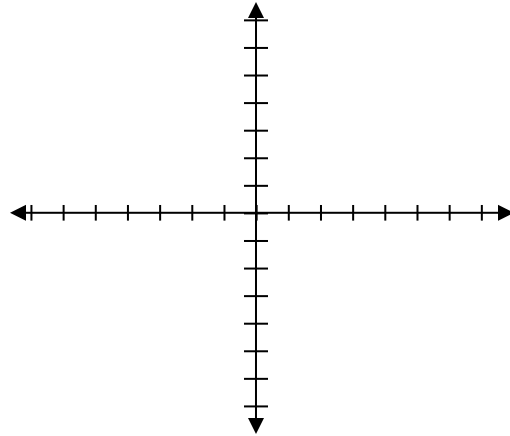
y-intercept \_\_\_\_\_

Concave Up or Down? \_\_\_\_\_

One Other Point on the Graph \_\_\_\_\_

Domain \_\_\_\_\_

Range \_\_\_\_\_



5. Find the x-intercept(s), range, and vertex of  $y = -3(x + 3)(x - 4)$ .

6-8. Simplify each radical expression; make sure that all denominators are rational.

6.  $\sqrt{240}$

7.  $\sqrt{\frac{8}{3}}$

8.  $\frac{9}{2+\sqrt{5}}$

9.

On Saturday afternoon, Armand sent  $m$  text messages each hour for 5 hours, and Tyrone sent  $p$  text messages each hour for 4 hours. Which of the following represents the total number of messages sent by Armand and Tyrone on Saturday afternoon?

- A)  $9mp$
- B)  $20mp$
- C)  $5m + 4p$
- D)  $4m + 5p$

10.

$$(x^2y - 3y^2 + 5xy^2) - (-x^2y + 3xy^2 - 3y^2)$$

Which of the following is equivalent to the expression above?

- A)  $4x^2y^2$
- B)  $8xy^2 - 6y^2$
- C)  $2x^2y + 2xy^2$
- D)  $2x^2y + 8xy^2 - 6y^2$