

## Quadratics EoC Prep

$$x = \frac{-b \pm \sqrt{b^2 - 4ac}}{2a}$$

$$\sqrt{-1} = i$$

$$i^2 = -1$$

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

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

$$y = a(x - r_1)(x - r_2)$$

$$h = \frac{-b}{2a}$$

1

Select all expressions equivalent to  $12x^2 - 27$ .

- A  $3(2x - 3)^2$
- B  $3(4x^2 - 9)$
- C  $3(2x + 3)(2x - 3)$
- D  $(6x + 9)(2x - 3)$
- E  $(6x - 9)(2x - 3)$

2

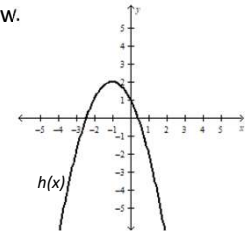
Write the quadratic function  $y = -3x^2 + 12x - 8$  in vertex form by writing numbers and/or operational symbols (+ or -) in the boxes below.

$$y = \square (x \square \square)^2 \square \square$$

3

The function  $f(x)$  is given by the equation  $f(x) = -2(x + 3)(x - 5)$ .  
The function  $g(x)$  is represented by the table below.  
The function  $h(x)$  is represented by the graph.

$x$	-3	-2	-1	0	1	2	3
$g(x)$	5	0	-3	-4	-3	0	5



Which of the following statements is true?

- A The y-intercept of  $f(x)$  is 10 units below the y-intercept of  $g(x)$ .
- B The y-intercept of  $g(x)$  is 5 units above the y-intercept of  $h(x)$ .
- C The y-intercept of  $h(x)$  is 29 units below the y-intercept of  $f(x)$ .
- D Two of these functions have the same y-intercept.

- 4 The polynomial  $4x^2 - 21x - 18$  can be written as  $(4x + 3)(x - 6)$ .  
At what x-values does the graph of the polynomial cross the x-axis?

**No calculator problem!!**

The graph of this quadratic crosses the x-axis at  4 and at  6 .  
 0.75  1.5  
 -0.75  -1.5  
 -4  -6

- 5 Consider the quadratic equation  $4x^2 - 3x + 5 = 0$ .

Find the solution(s) of this equation. Write one solution in each box, using simplest radical form.

If there is only one solution, leave the second box blank.

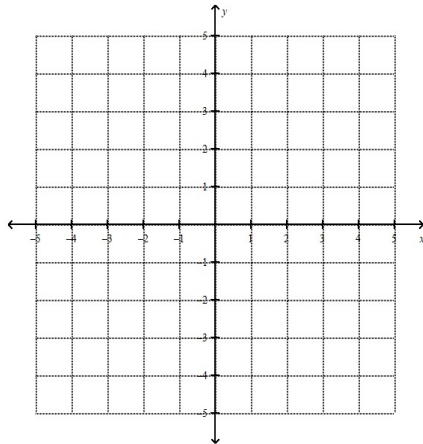


- 6 The graph of the function  
 $f(x) = -3x^2 + 6x - 1$  is a parabola.

Use the coordinate plane to graph the following points from the parabola:

- x-intercept(s)
- y-intercept(s)
- Maximum or minimum

Coordinates should be accurate to the nearest half unit.



- 7 A parabola has x-intercepts at 4 and -2 and has a maximum value of 12.

Write the equation of the parabola in any form.