

## Factoring Test Solutions

$$(15) \quad c^2 + 2c - 24 = 0$$

$$\underline{(c + 6)} \underline{(c - 4)} = 0$$

$$\begin{array}{r} c + 6 = 0 \\ -6 \quad -6 \\ \hline c = -6 \end{array}$$

$$\begin{array}{r} c - 4 = 0 \\ +4 \quad +4 \\ \hline c = 4 \end{array}$$

$$\begin{array}{r} 1, 24 \\ 2, 12 \\ 3, 8 \\ 4, 6 \end{array}$$

$$c = -6, 4$$

$$\textcircled{10} \quad \begin{array}{r} 5m^2 - 12 = -28m \\ +28m \quad +28m \end{array}$$

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$$5m^2 + 28m - 12 = 0$$

$$\underline{(5m - 2)(m + 6) = 0}$$

1, 12  
2, 6  
3, 4

$$m = \frac{2}{5}, -6$$

$$\begin{array}{r} 5m - 2 = 0 \\ +2 \quad +2 \\ \hline 5m = 2 \\ m = \frac{2}{5} \end{array}$$

$$\begin{aligned} \textcircled{1} \quad d^2 &= 12d - 35 \\ -) 2d & \leftarrow 35 - 12d + 35 \\ \hline d^2 - 12d + 35 &= 0 \\ \underline{(d-5)(d-7)} &= 0 \\ d &= 5, 7 \end{aligned}$$

$$\textcircled{18} \quad \begin{array}{r} 4x^2 = 32x \\ -32x \quad -32x \\ \hline 4x^2 - 32x = 0 \\ 4x(x-8) = 0 \end{array}$$

$$\begin{array}{r} 4x = 0 \\ \hline 4 \quad 4 \\ \hline x = 0 \end{array}$$

$$\begin{array}{r} x - 8 = 0 \\ \hline +8 \quad +8 \\ \hline x = 8 \end{array}$$

$$\textcircled{x = 0, 8}$$

$$\textcircled{2} \quad \frac{x^5 y^4 - x^6 y^3}{x^4 y^3} -$$

$$\frac{x^3 y^2 - x^2 y^4}{x^2 y}$$

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

$$\cancel{xy} - x^2 - \cancel{xy} + y^3$$

$$-x^2 + y^3$$

Q20

$$x^2 + (12-x)^2 = 74$$

$$x^2 + 144 - 24x + x^2 = 74$$

$$\begin{array}{r} (12-x)(12-x) \\ 144 \end{array} \quad 2x^2 - 24x + 144 = 74$$

$$\begin{array}{r} -74 \quad -74 \\ \hline \end{array}$$

$$\frac{2x^2 - 24x + 70 = 0}{2}$$

$$x^2 - 12x + 35 = 0$$

$$(x-5)(x-7) = 0 \quad x = 5, 7$$

5 and 7

$$\textcircled{2} \quad \underline{9mn + 2m} - \underline{9n^2 - 2n}$$

$$m(9n+2) - n(9n+2)$$

$$(9n+2)(m-n)$$

$$\textcircled{9} \quad 8a^5 + 10a^4 - 3a^3$$

$$a^3(8a^2 + 10a - 3)$$

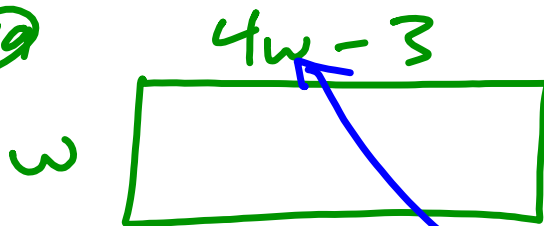
$$a^3(4a - 1)(2a + 3)$$

$$\begin{array}{r} 8a^2 + 10a - 3 \\ \underline{-24a^2} \\ 8a^2 + 12a - 2a - 3 \end{array}$$

$$\begin{array}{r} 4a(2a+3) - (2a+3) \\ (2a+3)(4a-1) \end{array}$$



Q19



$$w(4w-3) = 52$$

$$4w^2 - 3w = 52$$

$$- 52 \quad - 52$$

$$4w^2 - 3w - 52 = 0$$

$$(4w + 13)(w - 4) = 0$$

$$(2w \quad ) (2w \quad )$$

$$w = -\frac{13}{4} \quad \textcircled{4}$$

1, 52  
2, 26  
4, 13

$4m \times 13m$

$$\textcircled{10} \quad 5x^3 - 10xy + 5y^2$$

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

$$5x(x - y)^2$$

$$\begin{aligned} \textcircled{12} \quad & 6a^3 + 3a^2b - 2ab^2 - b^3 \\ & 3a^2(2a+b) - b^2(2a+b) \\ & (2a+b)(3a^2-b^2) \end{aligned}$$

$$\textcircled{2} \quad \underline{a^2} + \underline{9b^2} - c^2 + \underline{6ab}$$

$$\underline{a^2 + 6ab + 9b^2} - c^2$$

$$(a + 3b)^2 - c^2$$

$$(a + 3b + c)(a + 3b - c)$$

$$\textcircled{1} \quad \frac{20p^5r}{-15pr^3} = \frac{4p^4}{-3r^2}$$

To graph a parabola in the form...

$$f(x) = ax^2 + bx + c$$

The x-coordinate of the vertex will be...

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

$$f(x) = 2x^2 - 8x + 3 \quad a=2 \quad b=-8$$

$$-\frac{b}{2a} = -\frac{-8}{2(2)} = -\frac{-8}{4} = -(-2) = 2$$

$$f(2) = -5$$

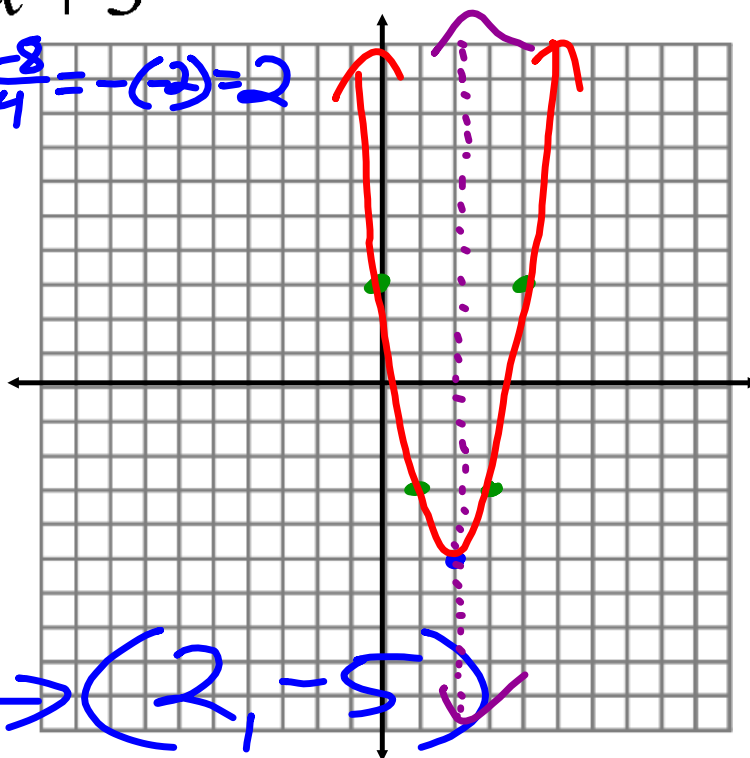
$$f(1) = -3$$

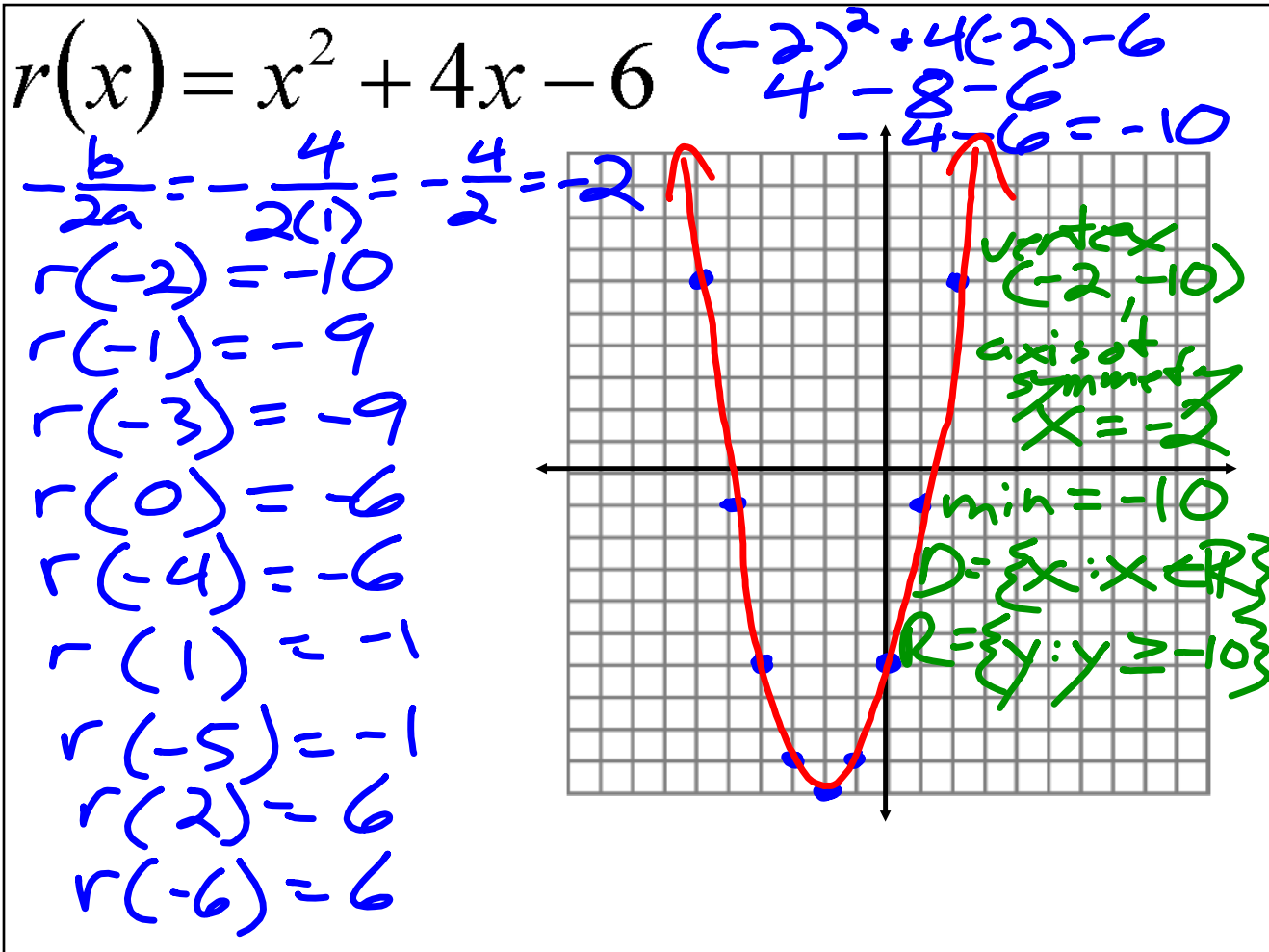
$$f(3) = -3$$

$$f(0) = 3$$

$$f(4) = 3$$

vertex  $\rightarrow (2, -5)$







$$h(x) = -2x^2 + 7$$

$$-\frac{b}{2a} = -\frac{0}{2(-2)} = -\frac{0}{-4} = 0$$

$$h(0) = 7$$

$$h(1) = 5$$

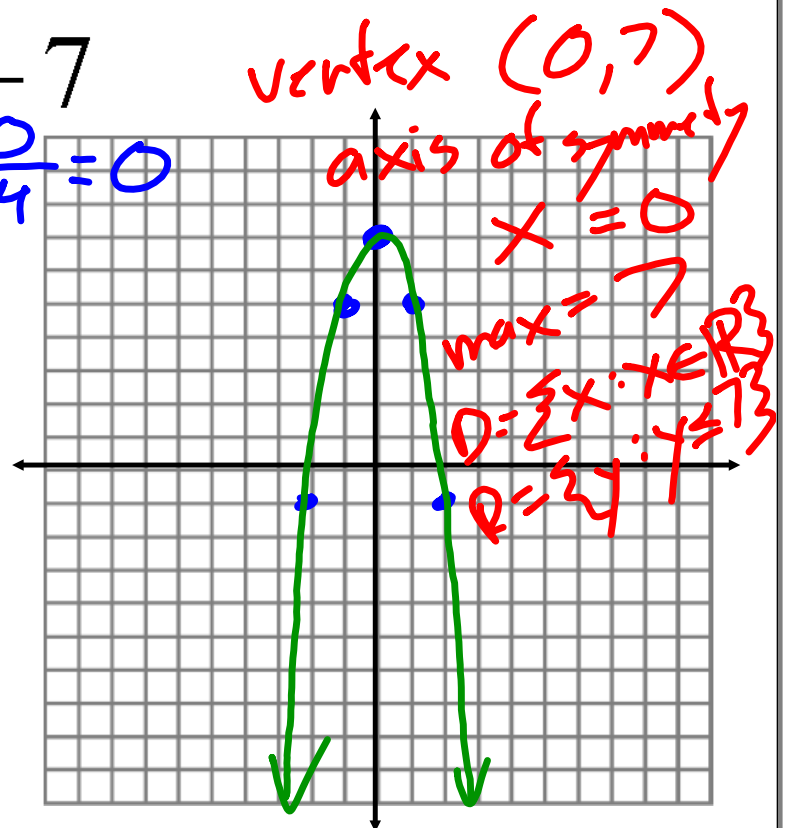
$$h(-1) = 5$$

$$h(2) = -1$$

$$h(-2) = -1$$

$$h(3) = -11$$

$$h(-3) = -11$$



Graph.

$$1) f(x) = -3x^2$$

$$2) g(x) = 4x^2 - 10$$

$$3) a(x) = 2x^2 - 12x + 11$$

$$4) m(x) = -2x^2 + 6x - 2$$

$$1) f(x) = -3x^2$$

$$-\frac{0}{2(-3)} = -\frac{0}{-6} = 0$$

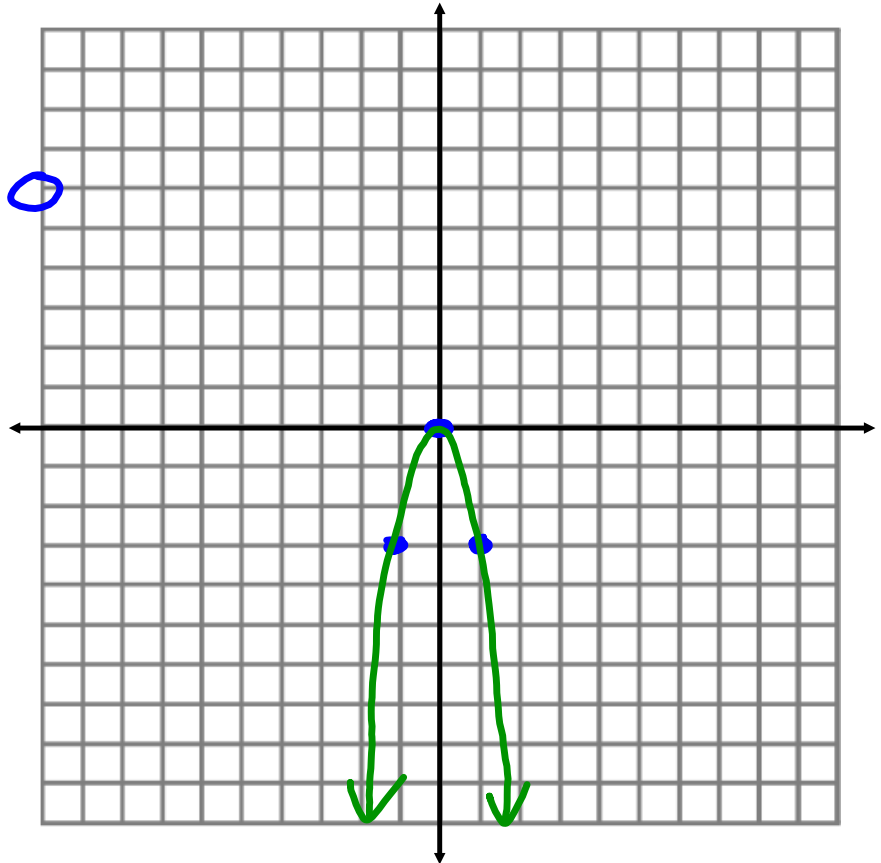
$$f(0) = 0$$

$$f(-1) = -3$$

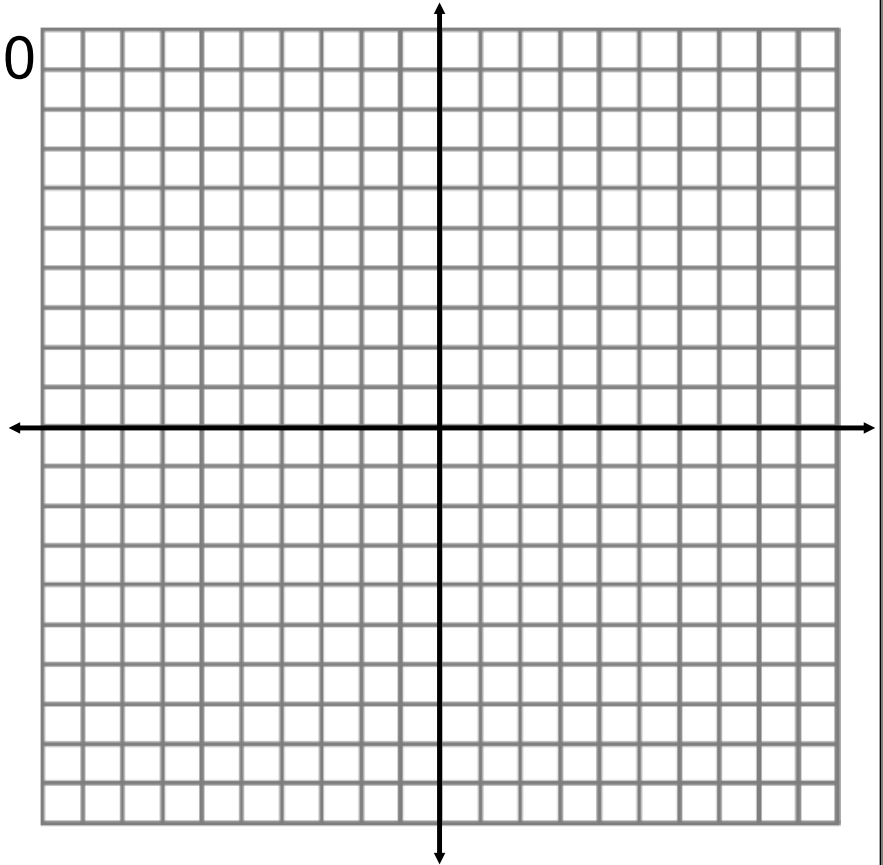
$$f(-1) = -3$$

$$f(2) = -12$$

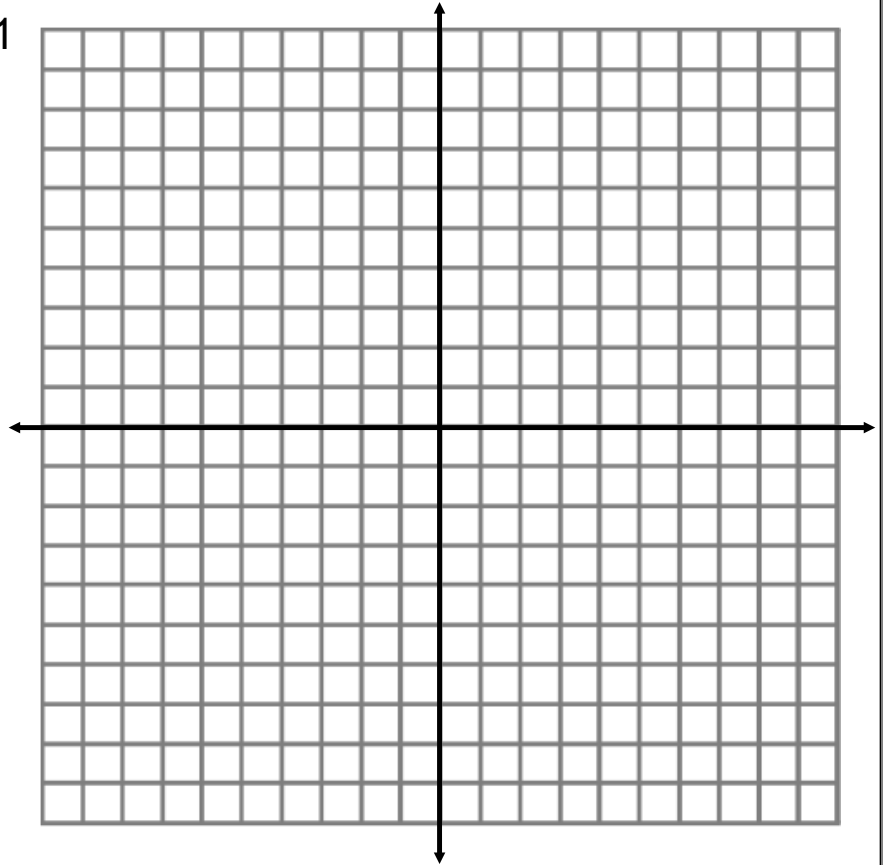
$$f(-2) = -12$$



2)  $g(x) = 4x^2 - 10$



3)  $a(x) = 2x^2 - 12x + 11$



4)  $m(x) = -2x^2 + 6x - 2$

