

# HWK 2.4A

2 Rt column  
3 Rt column  
4.

1. Solve each equation. and find the vertex

- (a)  $(x + 5)(x - 2) = 0$
- (b)  $3y(y - 5) = 0$
- (c)  $(2m + 1)(m - 3) = 0$
- (d)  $(3t - 2)(t + 3) = 0$
- (e)  $(2x - 1)(3x - 2) = 0$
- (f)  $(r - 3)(r + 2) = 0$
- (g)  $a(a - 5) = 0$
- (h)  $(4x + 3)(5x - 2) = 0$
- (i)  $(3 - 4p)(2 - 7p) = 0$

2. Factor each expression. Then find the roots of each equation.

- (a)  $n^2 + 7n - 30 = 0$
- (b)  $2y^2 + 9y + 4 = 0$
- (c)  $m^2 + 8m + 15 = 0$
- (d)  $y^2 - y - 6 = 0$
- (e)  $x^2 - 2x - 15 = 0$
- (f)  $m^2 - 1 = 0$
- (g)  $4n^2 - 1 = 0$
- (h)  $16x^2 - 25 = 0$
- (i)  $9n^2 - 6n + 1 = 0$
- (j)  $3x^2 + 9x - 30 = 0$
- (k)  $5x^2 + 25x + 30 = 0$
- (l)  $4x^2 - 14x - 8 = 0$

3. Solve each equation.

- (a)  $4z = x^2 - x$
- (b)  $x^2 - 4x = 21$
- (c)  $a^2 = 2a + 48$
- (d)  $m^2 = 30 - 7m$
- (e)  $3 = 6x^2 - 7x$
- (f)  $15 + x = 2x^2$
- (g)  $2y^2 + 4 = -9y$
- (h)  $17x + 5x^2 = -6$
- (i)  $2m^2 = 3 - 5m$

4. a) Determine the y-intercept.  
b) Find the zeros.

- i)  $y = -(x + 5)^2 + 1$
- ii)  $y = -3(x + 3)^2 + 75$
- iii)  $y = 2(x - 1)^2 - 8$
- iv)  $y = \frac{1}{2}(x + 7)^2 - 18$
- v)  $y = \frac{-1}{3}(x - 2)^2 + 12$
- vi)  $y = \frac{1}{4}(x - 8)^2 - 25$

Answers:

4. i) a) (0, -24) b) (-4, 0), (-6, 0) ii) a) (0, 48) b) (-8, 0), (2, 0) iii) a) (0, -6) b) (-1, 0), (3, 0) iv) a) (0, 13/2) b) (-13, 0), (-1, 0) v) a) (0, 32/3) b) (-4, 0), (8, 0) vi) a) (0, -9) b) (-2, 0), (18, 0)

Handwritten notes and equations:

- $\xi - = w \text{ } \text{ } \frac{z}{1} = w \text{ (t)}$
- $\eta - = \lambda \text{ } \text{ } \frac{z}{1} = \lambda \text{ (g)}$
- $\frac{z}{5} - = x \text{ } \text{ } \xi = x \text{ (j)}$
- $\frac{\xi}{1} - = x \text{ } \text{ } \frac{z}{\xi} = x \text{ (e)}$
- $\xi = w \text{ } \text{ } \text{ } \text{ } = w \text{ (p)}$
- $9 - = v \text{ } \text{ } \text{ } \text{ } = v \text{ (c)}$
- $\xi - = x \text{ } \text{ } \text{ } \text{ } = x \text{ (q)}$
- $9 - = v \text{ } \text{ } \text{ } \text{ } = v \text{ (a)}$
- $4 = x \text{ } \text{ } \text{ } \text{ } \frac{z}{1} = x \text{ (l)}$
- $4 = x \text{ } \text{ } \text{ } \text{ } \frac{z}{1} = x \text{ (l)}$
- $z - = x \text{ } \text{ } \text{ } \text{ } \xi - = x \text{ (k)}$
- $z = x \text{ } \text{ } \text{ } \text{ } \xi - = x \text{ (f)}$
- $\frac{\xi}{1} = u \text{ (i)}$
- $\frac{z}{5} - = x \text{ } \text{ } \text{ } \frac{z}{5} = x \text{ (u)}$
- $\frac{z}{1} - = u \text{ } \text{ } \text{ } \frac{z}{1} = u \text{ (g)}$
- $1 - = w \text{ } \text{ } \text{ } \text{ } \text{ } = w \text{ (j)}$
- $\xi - = x \text{ } \text{ } \text{ } \text{ } \xi = x \text{ (e)}$
- $z - = x \text{ } \text{ } \text{ } \text{ } \xi = x \text{ (p)}$
- $\xi - = w \text{ } \text{ } \text{ } \text{ } \xi - = w \text{ (c)}$
- $\frac{z}{1} - = \lambda \text{ } \text{ } \text{ } \text{ } \eta - = \lambda \text{ (q)}$
- $\xi = u \text{ } \text{ } \text{ } \text{ } \text{ } \text{ } = u \text{ (v)}$
- $\frac{z}{2} = d \text{ } \text{ } \text{ } \text{ } \frac{z}{2} = d \text{ (t)}$
- $\frac{5}{2} = x \text{ } \text{ } \text{ } \text{ } \frac{z}{2} = x \text{ (u)}$
- $5 = v \text{ } \text{ } \text{ } \text{ } \text{ } \text{ } = v \text{ (g)}$
- $z - = x \text{ } \text{ } \text{ } \text{ } \xi = x \text{ (j)}$
- $\frac{\xi}{2} = x \text{ } \text{ } \text{ } \text{ } \frac{z}{1} = x \text{ (e)}$
- $\xi - = x \text{ } \text{ } \text{ } \text{ } \frac{\xi}{2} = x \text{ (p)}$
- $\xi = w \text{ } \text{ } \text{ } \text{ } \frac{z}{1} = w \text{ (c)}$
- $5 = \lambda \text{ } \text{ } \text{ } \text{ } \text{ } \text{ } = \lambda \text{ (q)}$
- $5 - = x \text{ } \text{ } \text{ } \text{ } \text{ } \text{ } \text{ } = x \text{ (v)}$

Handwritten notes:

- Solutions:
- (a) (2, 5), (6, 25)
- (b) (2, 7), (7, 27)
- (c) (-1, 5), (-10, 25)
- Vertex #