

## Quad 7 Answers

Quadratic diagrams and roots p.10

2a)  $y = (x-1)(x-5)$

Roots:  $(1, 0)$   $(5, 0)$

y-intercept:  $y = (-1)(-5) = 5$

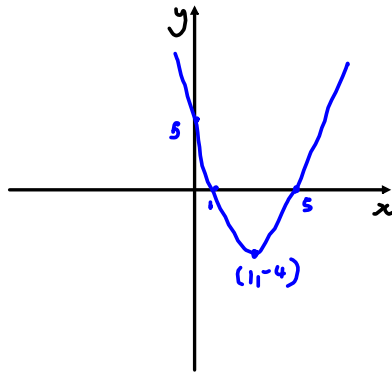
$$y = x^2 - 5x - x + 5$$

$$= x^2 - 6x + 5$$

$$= (x-3)^2 - 9 + 5$$

$$= (x-3)^2 - 4$$

TP:  $(3, -4)$



b)  $y = (x-4)(x-2)$

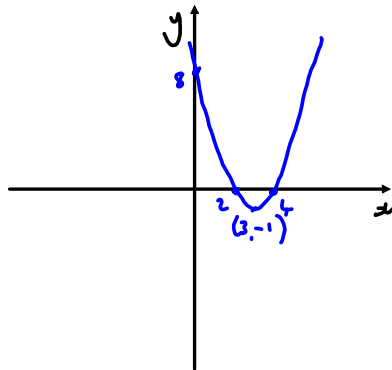
Roots:  $(4, 0)$   $(2, 0)$

y-intercept:  $y = (-4)(-2) = 8$

$$y = x^2 - 6x + 8$$

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

TP:  $(3, -1)$



c)  $y = (x-3)(x-7)$

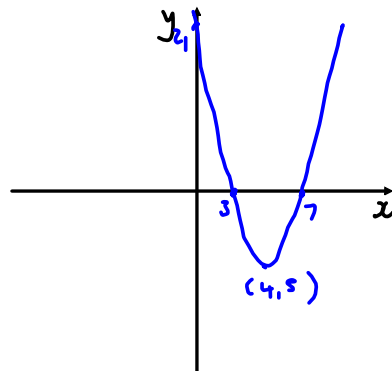
Roots:  $(3, 0)$   $(7, 0)$

y-intercept:  $y = (-3)(-7) = 21$

$$y = x^2 - 10x + 21$$

$$= (x-4)^2 + 5$$

TP:  $(4, 5)$



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d)  $y = (x - 6)(x - 8)$

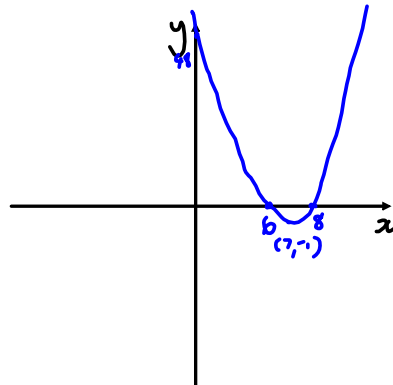
Roots:  $(6, 0)$   $(8, 0)$

y-intercept:  $y = (-6)(-8) = 48$

$$y = x^2 - 14x + 48$$

$$= (x - 7)^2 - 1$$

TP:  $(7, -1)$



k)  $y = (x + 9)(x + 5)$

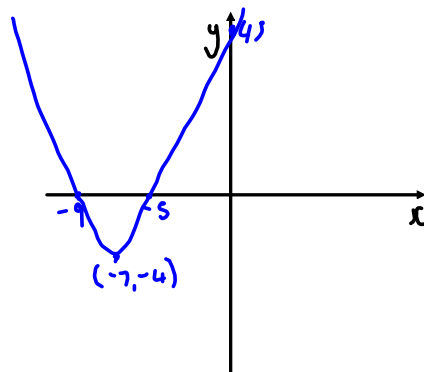
Roots:  $(-9, 0)$   $(-5, 0)$

y-intercept:  $y = (9)(5) = 45$

$$y = x^2 + 14x + 45$$

$$= (x + 7)^2 - 4$$

TP:  $(-7, -4)$



l)  $y = (x + 3)(x + 8)$

Roots:  $(-3, 0)$   $(-8, 0)$

y-intercept:  $y = 3 \times 8 = 24$

$$y = x^2 + 11x + 24$$

$$= (x + 5.5)^2 - 30.25 + 24$$

$$= (x + 5.5)^2 - 6.25$$

TP:  $(-5.5, -6.25)$

