

## MCR-3UP

## Review Stations

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STATION 1

a)  $7x(3x-1)$  b)  $(x+5)(x-4)$  c)  $(6n-13)(6m+13)$

d)  $2x^2 + 10xy + 3xy - 15y^2$  e)  $3ac^2(10a + 7ac - 1)$  f)  $(3x+8)^2$   
 $2x(x-5y) + 3y(x-5y)$  g)  $(6k+7)(k-8)$  h)  $3(x^2-7x+6)$   
 $(2x+3y)(x-5y)$  i)  $3(x-6)(x-1)$

STATION 2

$$6x - y + 1 = 0 \quad (1) \quad 6x - y + 1 = 0$$

$$(6) \quad \frac{x}{2} - \frac{2}{3}y = \frac{7}{3} \quad (2) \quad 6x - 8y - 28 = 0$$

$$3x - 4y = 14 \quad (2) \times 2 \quad 7y + 29 = 0$$

$$36x - y = -1 \quad \leftarrow \text{Sub } (2) \text{ in } (1) \quad 7y = -29$$

$$36x + \frac{29}{7} = -1 \quad x = \frac{-35}{42}$$

$$-6x = \frac{-35}{7} \quad x = \frac{-5}{6}$$

$$(x = \frac{-35}{7} \times \frac{1}{6})$$

STATION 3

$$y = a(x-5)(x+8)$$

$$\text{AOS: } \frac{5-8}{2} = \left(\frac{-3}{2}, 23\right)$$

$$23 = a\left(\frac{-3}{2}-5\right)\left(\frac{-3}{2}+8\right)$$

$$23 = a\left(\frac{-13}{2}\right)\left(\frac{13}{2}\right)$$

$$23 = 42.25a$$

$$a = 0.544$$

STATION 4

$$\text{AOS} = \frac{h+k}{2} = -5$$

$$-5 = \frac{-2+k}{2}$$

$$-5 = \frac{-1+k}{2}$$

$$-4 = \frac{k}{2}$$

$$-8 = k$$

$$y = a(x+8)(x+2)$$

$$-32 = a(8+2)(0+2)$$

$$-32 = 16a$$

$$-2 = a$$

$$y = -2(x+8)(x+2)$$

STATION 5

$$x^2 - 5x + a = 0 \quad \text{with } (x+2)(x-1) = 0$$

$$-5 = x^2 - 5x + a = 0 \quad \text{plug } (2)$$

$$-4 + 10 = a$$

$$-4 + 14 = a$$

$$b^2 - 5b + 4 = 0$$

$$(b-7)(b+2) = 0$$

$$b = 7$$

STATION 6

$$a) 5x - 10 = 4x + 1 \quad b) -4(x-2)(x-2) + 9 = 0$$

$$x = 11$$

$$-4(x^2 - 4x + 4) + 9 = 0$$

$$-4x^2 + 16x - 7 = 0$$

$$-4x^2 + 2x + 14x - 7 = 0$$

$$-2(2x+1) - 7(2x+1) = 0$$

$$(-2x-7)(2x+1) = 0$$

$$x = \frac{7}{2} \text{ or } x = -\frac{1}{2}$$

$$c) 2x^2 + 14x \quad 2x^2 - 6 + 3x = 0$$

$$4x^2 + 11x + 6 = 0$$

$$4x^2 + 8x + 3x + 6 = 0$$

$$4x(x+2) + 3(x+2) = 0$$

$$(4x+3)(x+2) = 0$$

$$x = -2 \text{ or } x = -\frac{3}{4}$$

STATION 8

$$y = 7(x^2 + 8x) + 19$$

$$= 7(x^2 + 8x + 16 - 16) + 19$$

$$= 7(x+4)^2 - 93 \quad \text{Vertex } -4, -93$$

STATION 10

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

$$= \frac{-9 \pm \sqrt{81 + 260}}{10}$$

$$= \frac{-9 \pm \sqrt{341}}{10}$$

STATION 7

Done on Desmos

STATION 9

$$a) 3x^2 - 16 \quad b) 25x^2 - 10x + 1$$

$$c) 6x^2 - 4x + 10x - 8$$

$$= 3(5x^2 + 6x - 8)$$

$$= 15x^2 + 18x - 24$$