

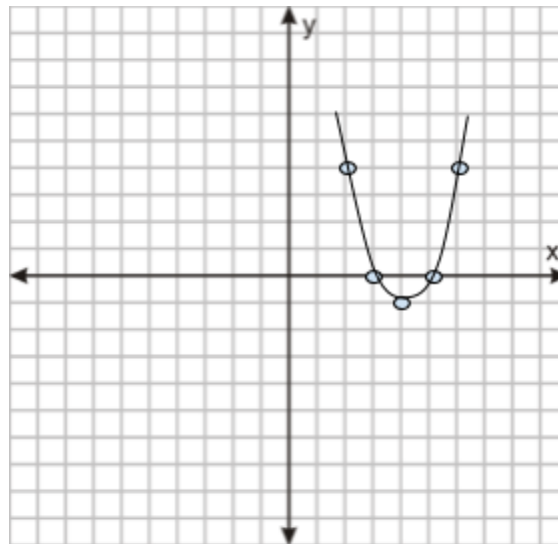
1) Graph $y = (x - 5)(x - 3)$ $y = x^2 - 8x + 15$ $x = \frac{-(-8)}{2(1)} = 4$ $y = (4)^2 - 8(4) + 15$

$$x - 5 = 0 \quad x - 3 = 0$$

Vertex: **(4,-1)**

x-intercepts: **(5,0), (3,0)**

x	y
2	3
3	0
4	-1
5	0
6	3



(Double-click to edit)

2) $y = 16(x - 9)^2 + 7$

Vertex: **(9,7)**

$h = 9, k = 7$ ($y = a(x - h)^2 + k$)

Axis of Symmetry: **$x = 9$**

3) $y = 2x^2 + 24x + 70$

Vertex: **(-6,-2)**

Domain: **All real #s**

Range: **$y \geq -2$**

$x = \frac{-24}{2(2)} = -6$

$y = 2(-6)^2 + 24(-6) + 70 = -2$

Axis of Symmetry: **$x = -6$**

Max/Min value: **Min**

#4-7: Simplify Remember $i^2 = -1$

4) $(-5 + 8i) + (-1 - 2i)$

$-5 + -1 + 8i + -2i = -6 + 6i$

5) $(6 + 3i) - (-4 + 5i)$

$6 - -4 + 3i - 5i = 10 - 2i$

6) $(2i)(-4 - i)$

$(2i)(-4) + (2i)(-i) = -8i + -2i^2 = -8i + -2(-1) = -2 + 8i$

7) $(5 + 5i)(-3 + 6i)$

$(5)(-3) + (5)(6i) + (5i)(-3) + (5i)(6i) = -15 + 30i + -15i + 30i^2 = -15 + 15i + 30(-1) = -15 + 15i + -30 = -45 + 15i$

8) Solve by factoring: $5x^2 - 3x - 15 = -7$
 $5x^2 - 3x - 8 = 0$
 $(5x - 8)(x + 1) = 0$
 $x = 8/5, -1$

9) Solve with the quadratic formula: $9x^2 + 8x + 2 = 0$
 $a=9$ $b=8$ $c=2$
 $x = \frac{-(-8) \pm \sqrt{(-8)^2 - 4(9)(2)}}{2(9)}$
 $x = \frac{-8 \pm \sqrt{-8}}{18}$
 $x = \frac{-8 \pm i\sqrt{8}}{18} = \frac{-4 \pm i\sqrt{2}}{9}$