

Adding and Subtracting (Complex Numbers Practice I)

1) $(-i) + (6i)$

$$5i$$

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

$$-12i$$

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

$$-9i$$

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

$$3 + 2i$$

5) $(-2i) + (5i)$

$$3i$$

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

$$7i$$

7) $(-6 - 2i) + (6 - 5i)$

$$0 - 7i$$

8) $(-5 + 3i) - (4 - 5i)$

$$-9 + 8i$$

9) $(5 + 6i) + (2 - 7i)$

$$7 - i$$

10) $(6 - 8i) - (4i) + 7$

$$13 - 12i$$

11) $(3 - 4i) - (-5 + 7i)$

$$\underline{3 - 4i} + \underline{5 - 7i}$$
$$8 - 11i$$

12) $(5 + 3i) - (-2 - 5i)$

$$\underline{5 + 3i} + \underline{2 + 5i}$$
$$7 + 8i$$

13) $(5 - 6i) + (5i) + (7 + 6i)$

$$\underline{5 - 6i} + \underline{5i} + \underline{7 + 6i}$$
$$12 + 5i$$

14) $(-7 + 7i) - (-7 - 3i) + (-7 - 8i)$

$$\underline{-7 + 7i} + \underline{7 + 3i} + \underline{-7 - 8i}$$
$$-7 + 2i$$

15) $(-4 - 7i) - (4 + 5i) - (2 - i)$

$$\underline{-4 - 7i} - \underline{4 - 5i} - \underline{2 + i}$$
$$-10 - 11i$$

16) $(-1 + i) - (-7 + 4i) - 5$

$$\underline{-1 + i} + \underline{7 - 4i} - \underline{5}$$
$$1 - 3i$$

17) $(-1 + 6i) + (5 - 2i) - (8i)$

$$\underline{-1 + 6i} + \underline{5 - 2i} - \underline{8i}$$
$$4 - 4i$$

18) $(1 + 6i) + (6 - 2i) - (-7 + 5i)$

$$\underline{1 + 6i} + \underline{6 - 2i} + \underline{7 - 5i}$$
$$14 - i$$

19) $(-5 + 7i) - (-6 + i) - (-6 + 5i)$

$$\underline{-5 + 7i} + \underline{6 - i} + \underline{6 - 5i}$$
$$7 + i$$

20) $(-8 + 6i) + (6 - 6i) + (7 + 6i)$

$$5 + 6i$$

DIRECTIONS: Sketch a graph of each of the following quadratics. Remember that you must include five points on each of your graphs.

1) $f(x) = x^2 + 4x - 6$

y-intercept: $(0, -6)$ + $(4, -6)$ *by symmetry*

axis of symmetry:

$$x = \frac{-4}{2(1)} = \frac{-4}{2} \quad \boxed{x = -2}$$

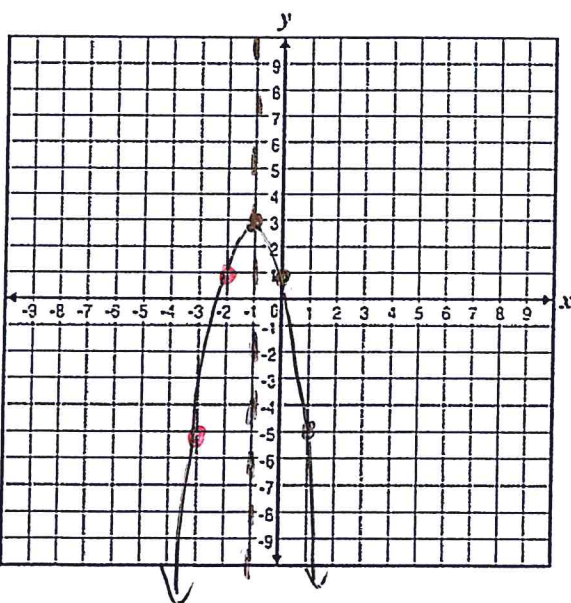
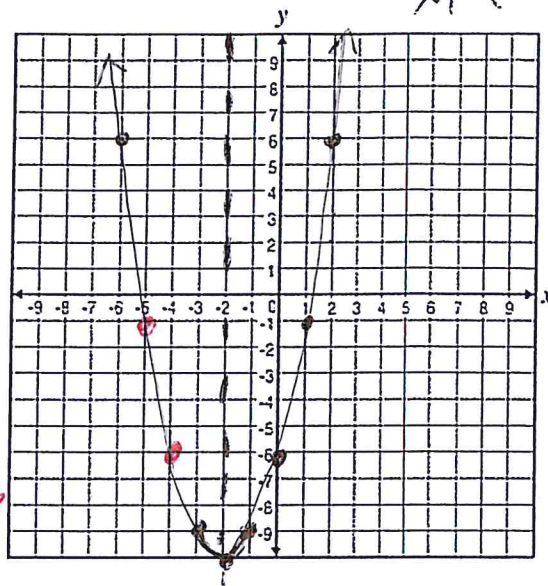
additional point:

$$f(1) = 1^2 + 4(1) - 6 = 1 + 4 - 6 = -1$$

vertex: $(-2, ?)$

$$f(-2) = (-2)^2 + 4(-2) - 6 = 4 - 8 - 6 = -10$$

$(1, -1)$ + $(-5, -1)$ *by symmetry*
 $V(-2, -10)$



2) $f(x) = -2x^2 - 4x + 1$

y-intercept: $(0, 1)$ + $(-2, 1)$ *by symmetry*

axis of symmetry:

$$x = \frac{-(-4)}{2(-2)} = \frac{4}{-4} \quad \boxed{x = -1}$$

additional point:

$$f(1) = -2(1)^2 - 4(1) + 1 = -2 - 4 + 1 = -5$$

vertex: $V(-1, ?)$

$$f(-1) = -2(-1)^2 - 4(-1) + 1$$

$$f(-1) = -2 + 4 + 1$$

$$f(-1) = 3 \quad V(-1, 3)$$

$(1, -5)$ + $(-3, -5)$ *by symmetry*

Next 2 points off graph $(2, -15)$ + $(-4, -15)$

Complex #'s Pr II

Operations With Complex Radicals Key

$$(32) -5 - 3i \quad (33) 26 \quad (34) 21 + 27i$$

$$(35) 18 - 48i \quad (36) -7 + 24i \quad (37) 13$$

$$(38) 8 \quad (39) -9 + 7i \quad (40) -1 + 6i$$

$$(47) 22 - 4i \quad (48) 2 - 16i \quad (49) 265$$

$$(50) -2 + 8i \quad (51) -5 + 16i \quad (52) 169$$

$$(53) 11 - 2i \quad (54) 10 - 10i \quad (55) -144 - 130i$$