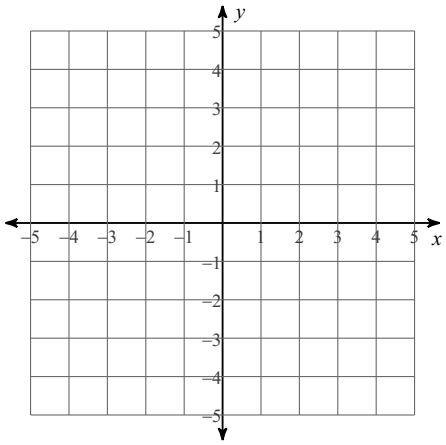
Algebra 2 Name_____

Quadratic Review Problems

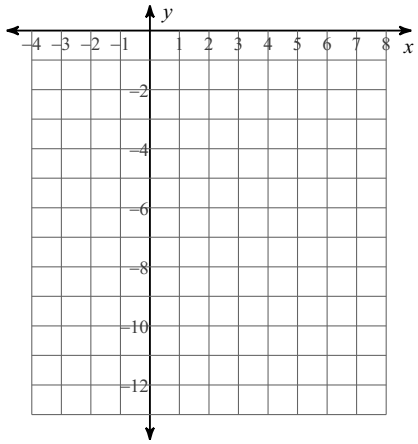
Period____

Sketch the graph of each function.

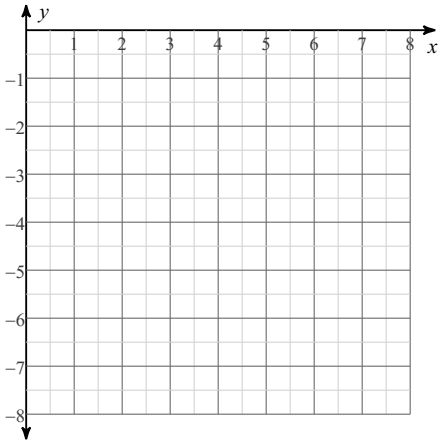
1) $y = -2x^2 + 4x + 2$



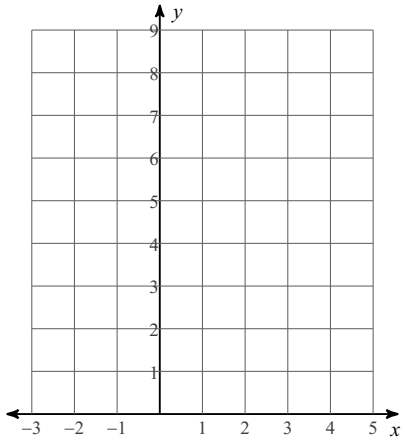
2) $y = -2x^2 - 4x - 6$



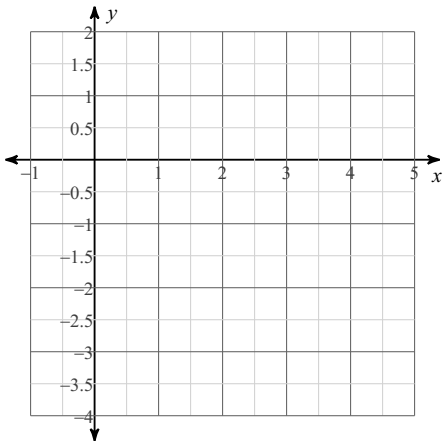
3) $y = -x^2 + 4x - 7$



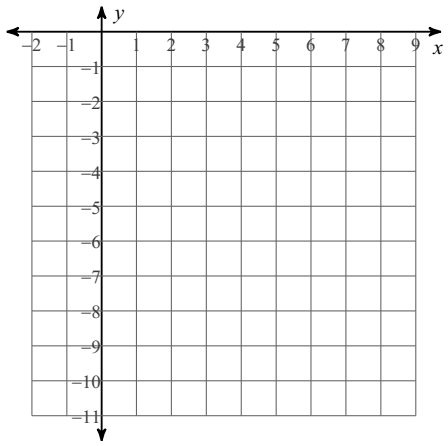
4) $y = (x - 1)^2 + 4$



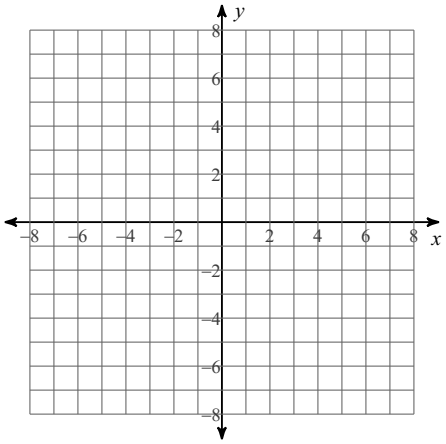
5) $y = (x - 3)^2 - 3$



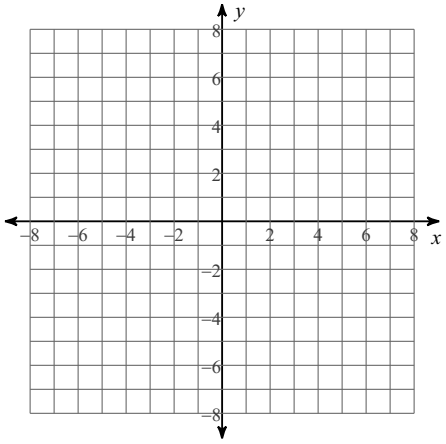
6) $y = -2(x - 4)^2 - 2$



7) $y = \frac{1}{2}(x - 3)(x + 5)$



8) $y = -(x + 2)(x + 6)$



Solve each equation by factoring.

9) $n^2 - 5n - 24 = 0$

10) $n^2 - 10n + 24 = 0$

11) $a^2 + 15a + 56 = 0$

12) $2a^2 - 19a + 35 = 0$

13) $5v^2 + 28v - 12 = 0$

14) $2v^2 - 5v - 25 = 0$

15) $7p^2 - 30p + 8 = 0$

16) $3x^2 + 8x - 3 = 0$

17) $3m^2 + 13m - 30 = 0$

18) $7r^2 + 16r - 15 = 0$

19) $3p^2 + 10p + 8 = 0$

20) $15n^2 + 26n + 8 = 0$

21) $4r^2 + 7r - 15 = 0$

22) $3n^2 - 4n - 15 = 0$

Solve each equation by taking square roots.

23) $-19 - \frac{16n^2}{2} = -2723$

24) $4(x - 3)^2 - 13 = 1275$

25) $19r^2 + 8 = 407$

26) $16(p - 2)^2 - 4 = 4188$

Solve each equation by completing the square.

27) $r^2 - 14r - 51 = 0$

28) $x^2 - 16x - 36 = 0$

29) $n^2 + 18n - 63 = 0$

30) $x^2 - 16x - 87 = 0$

31) $k^2 - 18k - 19 = 0$

32) $n^2 - 8n + 7 = 0$

Solve each equation with the quadratic formula.

33) $12n^2 + 3n = -6$

34) $6b^2 - 20 = -6b$

35) $11p^2 + 2 = 8p$

36) $9v^2 + 8 = 8v$

37) $3n^2 - 51 = -8n$

38) $3p^2 - 11p = 4$

Simplify.

39) $4 + (6 + i) + (8i)$

40) $(-2 + 4i)(3 + 3i)$

41) $(5i)(-6 + 2i) - 3(1 + 8i)$

42) $(-3i)(-5 - 8i) + 2(3i)$

43) $(6 + 8i) - (-4 + 4i)$

44) $(7i)(7 + 8i) - 2 \cdot (i)$

45) $(1 + 8i)^2$

46) $(-3 + i)(-6 - 7i)$

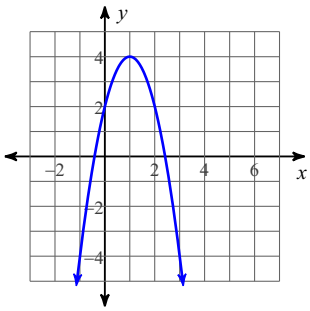
47) $\dfrac{8 - 2i}{-10 - 9i}$

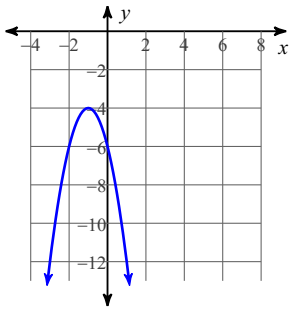
48) $\dfrac{9}{4 - 5i}$

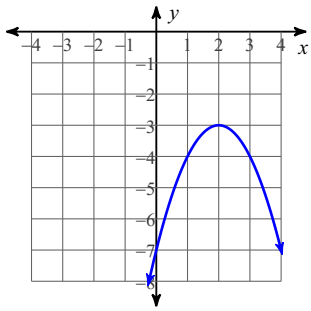
49) $\dfrac{7}{-2 + 4i}$

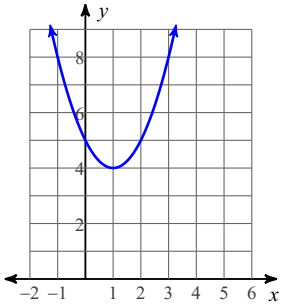
50) $\dfrac{6i}{9 - 3i}$

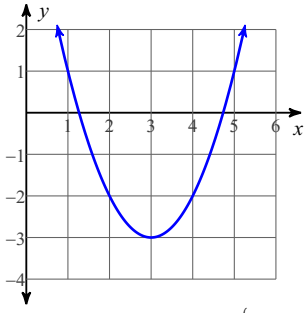
Answers to Quadratic Review Problems

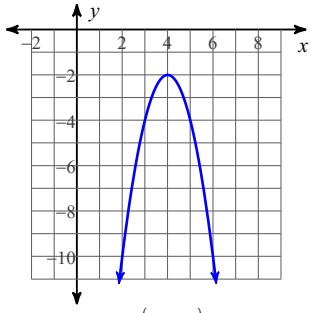
1) 

2) 

3) 

4) 

5) 

6) 

7)

8)

9) $\{-3, 8\}$

10) $\{6, 4\}$

11) $\{-8, -7\}$

12) $\left\{\frac{5}{2}, 7\right\}$

13) $\left\{\frac{2}{5}, -6\right\}$

14) $\left\{-\frac{5}{2}, 5\right\}$

15) $\left\{\frac{2}{7}, 4\right\}$

16) $\left\{\frac{1}{3}, -3\right\}$

17) $\left\{\frac{5}{3}, -6\right\}$

18) $\left\{\frac{5}{7}, -3\right\}$

19) $\left\{-\frac{4}{3}, -2\right\}$

20) $\left\{-\frac{4}{3}, -\frac{2}{5}\right\}$

21) $\left\{\frac{5}{4}, -3\right\}$

22) $\left\{-\frac{5}{3}, 3\right\}$

23) $\{13, -13\}$

24) $\{3 + \sqrt{322}, 3 - \sqrt{322}\}$

25) $\{\sqrt{21}, -\sqrt{21}\}$

26) $\{2 + \sqrt{262}, 2 - \sqrt{262}\}$

27) $\{17, -3\}$

28) $\{18, -2\}$

29) $\{3, -21\}$

30) $\{8 + \sqrt{151}, 8 - \sqrt{151}\}$

31) $\{19, -1\}$

32) $\{7, 1\}$

33) $\left\{\frac{-1 + i\sqrt{31}}{8}, \frac{-1 - i\sqrt{31}}{8}\right\}$

34) $\left\{\frac{-3 + \sqrt{129}}{6}, \frac{-3 - \sqrt{129}}{6}\right\}$

35) $\left\{\frac{4 + i\sqrt{6}}{11}, \frac{4 - i\sqrt{6}}{11}\right\}$

36) $\left\{\frac{4 + 2i\sqrt{14}}{9}, \frac{4 - 2i\sqrt{14}}{9}\right\}$

37) $\left\{3, -\frac{17}{3}\right\}$

38) $\left\{4, -\frac{1}{3}\right\}$

39) $10 + 9i$

40) $-18 + 6i$

41) $-13 - 54i$

42) $-24 + 21i$

43) $10 + 4i$

44) $-56 + 47i$

45) $-63 + 16i$

46) $25 + 15i$

47) $\frac{-62 + 92i}{181}$

48) $\frac{36 + 45i}{41}$

49) $\frac{-7 - 14i}{10}$

50) $\frac{3i - 1}{5}$