

Unit 1 refresher

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Find the absolute value of each complex number.

1) $|1 - 9i|$

2) $|-2 - 3i|$

Simplify.

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

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

5) $2(-7 - 4i) - (5i)(5 - 8i)$

6) $(1 - 3i)^2$

7) $\frac{5 + 7i}{-8 - 7i}$

8) $\frac{-6 - 7i}{-5i}$

Solve:

9) $4x^2 = 64$

10) $x^2 + 1 = 50$

11) $10 - 3a^2 = -18$

12) $7k^2 - 8 = -29$

13) $7p^2 + 7 = -7$

14) $3x^2 - 3 = -48$

Solve each equation by factoring.

15) $m(m + 2) = 0$

16) $(n + 1)(n - 5) = 0$

Solve:

17) $r^2 + 3r - 18 = 0$

18) $x^2 - 11x + 28 = 0$

19) $21b^2 - 25b - 9 = -5$

20) $18n^2 - 102n + 94 = 2n - 2 - 6n^2$

21) $x^2 - 2x - 8 = 0$

22) $v^2 + v - 20 = 0$

23) $n^2 = 5n - 7$

24) $7a^2 + 3 = 8a$

25) $k^2 + 7 = -3k$

26) $-3x^2 + 5 = 7 + 2x^2 + 2x$

Find the first five terms.

27) $a_n = 91 - 100n$

28) $a_n = -26 + 5n$

29) $a_1 = 23, d = -8$

30) $a_1 = -33, d = -20$

Find the term named in the problem.

31) $a_1 = 11, d = 10$

Find a_{20}

32) $a_1 = 36, d = -6$

Find a_{23}

Find the explicit formula.

33) $-1, -11, -21, -31, \dots$

35) $a_1 = -26, d = -7$

34) $-14, 86, 186, 286, \dots$

36) $a_1 = 31, d = -5$

Evaluate each arithmetic series described.

37) $a_1 = 15, a_n = 45, n = 11$

39) $\sum_{k=5}^{39} (8k - 3)$

41) $-24, -33, -42, -51, -60, -69$

43) $(-23) + (-31) + (-39) + (-47)\dots, n = 8$

38) $a_1 = 5, a_n = 15, n = 6$

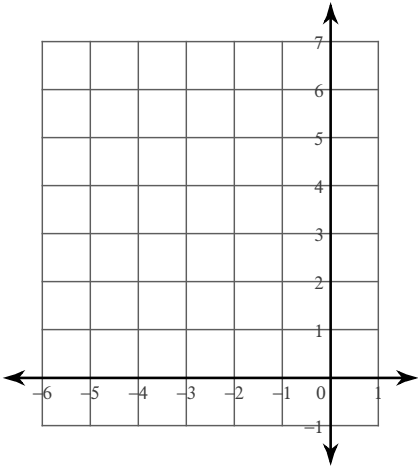
40) $\sum_{m=2}^{13} (14 - 9m)$

42) $9, 18, 27, 36, 45, 54$

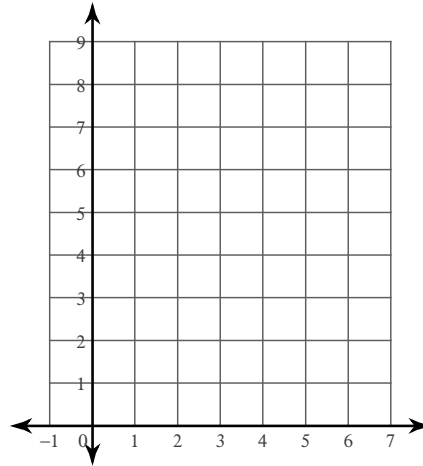
44) $24 + 33 + 42 + 51\dots, n = 12$

Sketch the graph of each function.

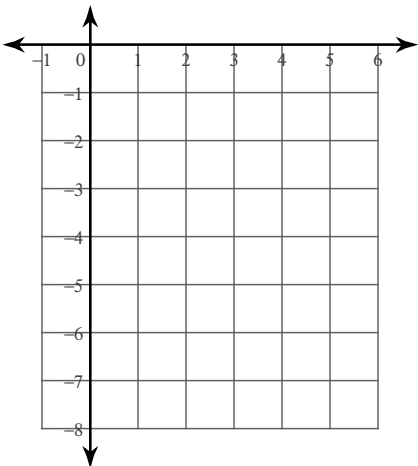
45) $y = (x + 4)^2 + 1$



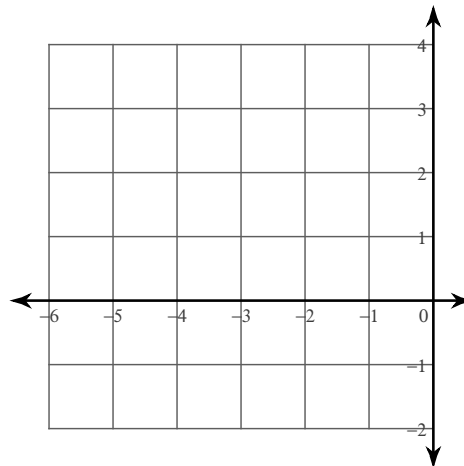
46) $y = (x - 2)^2 + 4$



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



48) $y = -(x + 2)^2 + 3$



Answers to Unit 1 refresher (ID: 1)

1) $\sqrt{82}$

2) $\sqrt{13}$

3) $2 + i$

4) $13i$

5) $-54 - 33i$

6) $-8 - 6i$

7) $\frac{-89 - 21i}{113}$

8) $\frac{-6i + 7}{5}$

9) $\{4, -4\}$

10) $\{7, -7\}$

11) $\left\{\frac{2\sqrt{21}}{3}, -\frac{2\sqrt{21}}{3}\right\}$

12) $\{i\sqrt{3}, -i\sqrt{3}\}$

13) $\{i\sqrt{2}, -i\sqrt{2}\}$

14) $\{i\sqrt{15}, -i\sqrt{15}\}$

15) $\{-2, 0\}$

16) $\{-1, 5\}$

17) $\{-6, 3\}$

18) $\{7, 4\}$

19) $\left\{-\frac{1}{7}, \frac{4}{3}\right\}$

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

21) $\{4, -2\}$

22) $\{4, -5\}$

23) $\left\{\frac{5 + i\sqrt{3}}{2}, \frac{5 - i\sqrt{3}}{2}\right\}$

24) $\left\{\frac{4 + i\sqrt{5}}{7}, \frac{4 - i\sqrt{5}}{7}\right\}$

25) $\left\{\frac{-3 + i\sqrt{19}}{2}, \frac{-3 - i\sqrt{19}}{2}\right\}$

26) $\left\{\frac{-1 - 3i}{5}, \frac{-1 + 3i}{5}\right\}$

27) $-9, -109, -209, -309, -409$

28) $-21, -16, -11, -6, -1$

29) $23, 15, 7, -1, -9$

30) $-33, -53, -73, -93, -113$

31) $a_{20} = 201$

32) $a_{23} = -96$

33) $a_n = 9 - 10n$

34) $a_n = -114 + 100n$

35) $a_n = -19 - 7n$

36) $a_n = 36 - 5n$

37) 330

38) 60

39) 6055

40) -642

41) -279

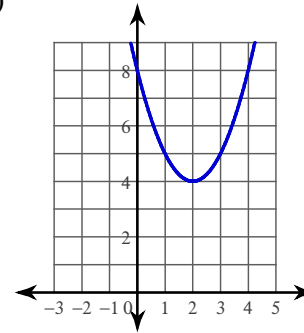
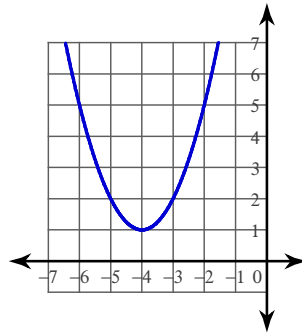
42) 189

43) -408

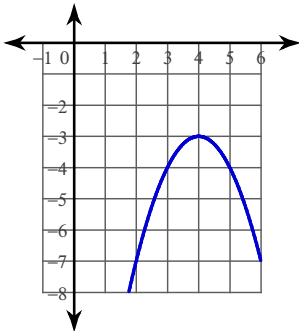
44) 882

45)

46)



47)



48)

