

# ALGEBRA I

**This Packet is required. An answer sheet is attached to check your answers. There will be a quiz on this material after going over the packet in class. No calculators allowed.**

**Be sure to show all work, either on the worksheets or on a separate sheet of paper. This WILL be collected.**

## Summer Review

**Evaluate each expression.**

1)  $2 + 4\frac{7}{8}$

2)  $\frac{1}{5} + \frac{11}{8}$

3)  $\frac{1}{2} - \frac{3}{7}$

4)  $\frac{1}{4} + 8\frac{7}{8}$

5)  $4\frac{3}{8} + 1\frac{1}{8}$

6)  $2\frac{3}{7} - \frac{5}{7}$

**Find each product.**

7)  $2\frac{1}{2} \times \frac{3}{2}$

8)  $2\frac{1}{4} \times \frac{1}{4}$

9)  $2\frac{4}{5} \times 2$

10)  $3\frac{1}{2} \times \frac{3}{4}$

**Find the Greatest Common Factor of each.**

11) 44, 24

12) 33, 22

13) 9, 6

14) 36, 27

**Evaluate each using the values given.**

15)  $h + 5 - j$ ; use  $h = 4$ , and  $j = 6$

16)  $5(a - b)$ ; use  $a = 5$ , and  $b = 2$

17)  $4 - (p + m)$ ; use  $m = 1$ , and  $p = 2$

18)  $a + b + 1$ ; use  $a = 3$ , and  $b = 4$

19) If the weight of a package is multiplied by  $\frac{2}{3}$  the result is 30.8 pounds. Find the weight of the package.

20) How old is Totsakan if he was 42 years old seven years ago?

**Solve each equation.**

21)  $7 + \frac{p}{18} = 8$

22)  $10x + 3 = -77$

23)  $-67 = 10 + 7x$

24)  $\frac{b + 9}{5} = 5$

25) Danielle spent half of her weekly allowance on clothes. To earn more money her parents let her clean the gutters for \$10. What is her weekly allowance if she ended with \$20?

26) The sum of three consecutive even numbers is 60. What is the smallest of these numbers?

**Solve each equation.**

27)  $4(3 - 5x) = -128$

28)  $-82 = 2(1 - 6m)$

29)  $-90 = 5(3n + 6)$

30)  $3 - 6(1 + 7r) = 207$

31)  $5(4 - 8x) = -100$

32)  $-238 = 7(1 - 5v)$

**Simplify. Your answer should contain only positive exponents.**

33)  $7x^2 \cdot 3x^4$

34)  $3k^2 \cdot 6k^4$

35)  $\frac{2x^4}{5x^2}$

36)  $\frac{6p^4}{8p^2}$

37)  $(2n^4)^3$

38)  $(8a^4)^3$

**Simplify. Write each answer in scientific notation.**

39)  $(8.2 \times 10^6)(3.52 \times 10^1)$

**Write each number in scientific notation.**

40) 0.04

**Find each square root.**

41)  $-\sqrt{225}$

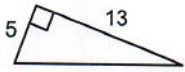
42)  $-\sqrt{36}$

43)  $\sqrt{225}$

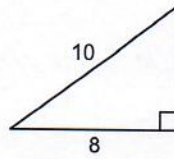
44)  $\sqrt{100}$

Use the Pythagorean Theorem ( $a^2+b^2=c^2$ ) to find each missing length to the nearest tenth.

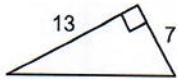
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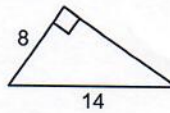
46)



47)



48)



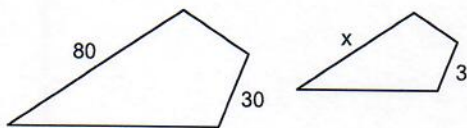
Solve each proportion by Cross Multiplication.

49)  $\frac{x}{7} = \frac{5}{9}$

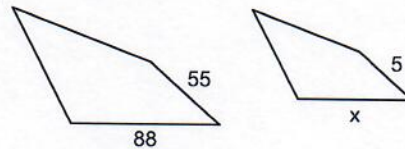
50)  $\frac{5}{n} = \frac{8}{9}$

Each pair of figures is similar. Find the missing side.

51)

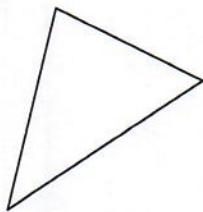


52)



Classify each triangle by its angles and sides. By angles: Straight, Acute, or Obtuse. By sides: Scalene, Isosceles, or Equilateral.

53)

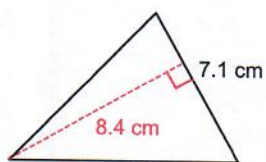


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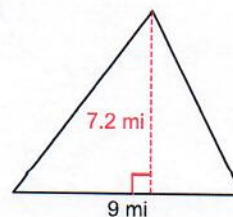


Find the area of each.

55)

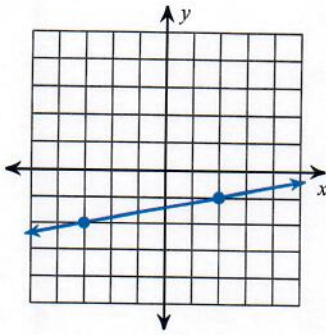


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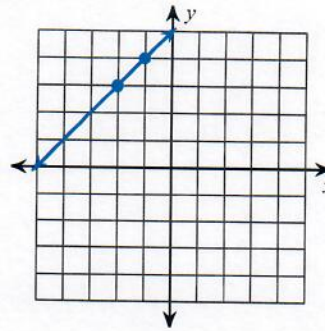


Find the slope of each line.

57)



58)



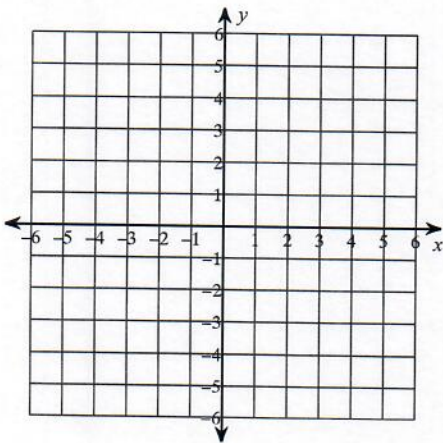
Find the slope and y-intercept of each line.

59)  $y = \frac{9}{4}x - 5$

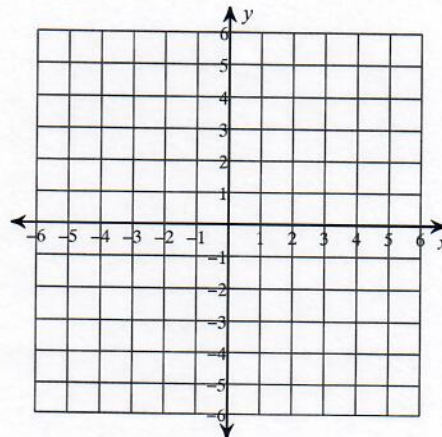
60)  $y = 3x + 4$

Sketch the graph of each line.

61)  $y = -x - 3$

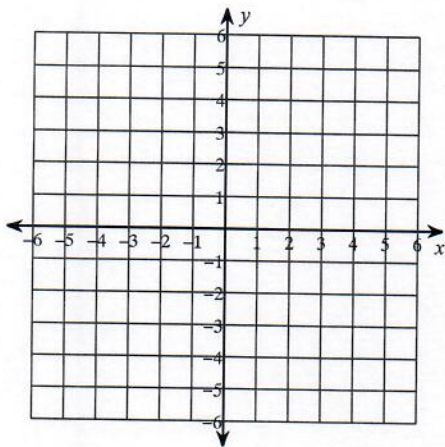


62)  $y = \frac{5}{3}x + 1$

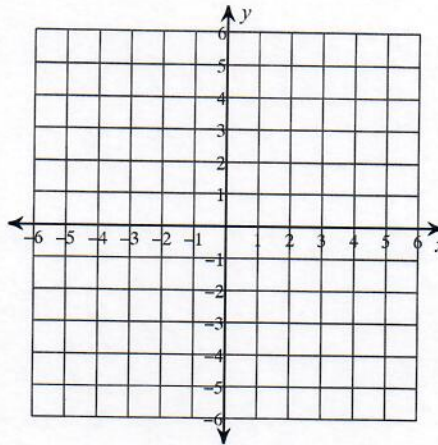




63)  $y = -\frac{3}{4}x + 1$



64)  $y = 8x - 3$



Write the slope-intercept form of the equation of each line given the slope and y-intercept.

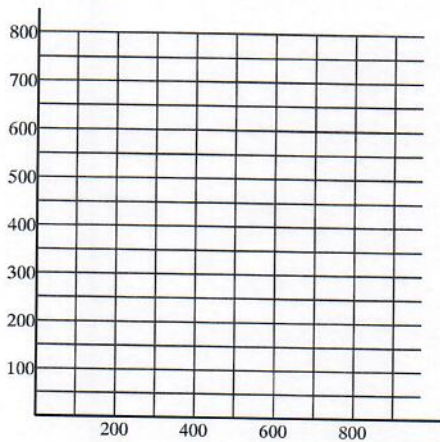
65) Slope =  $-6$ , y-intercept =  $-5$

66) Slope =  $1$ , y-intercept =  $5$

Construct a scatter plot. State if there appears to be a positive correlation, negative correlation, or no correlation. When there is a correlation, identify the relationship as linear or nonlinear.

67)

X	Y	X	Y
20	110	670	790
270	490	880	800
460	700	950	770
470	680	970	750
500	710	970	790



# Answers to Summer 2021 Review

1)  $6\frac{7}{8}$

2)  $1\frac{23}{40}$

3)  $\frac{1}{14}$

4)  $9\frac{1}{8}$

5)  $5\frac{1}{2}$

6)  $1\frac{5}{7}$

7)  $3\frac{3}{4}$

8)  $\frac{9}{16}$

9)  $5\frac{3}{5}$

10)  $2\frac{5}{8}$

11) 4

12) 11

13) 3

14) 9

15) 3

16) 15

17) 1

18) 8

19) 46.2

20) 49

21) {18}

22) {-8}

23) {-11}

24) {16}

25) \$20

26) 18

27) {7}

28) {7}

29) {-8}

30) {-5}

31) {3}

32) {7}

33)  $21x^6$

34)  $18k^6$

35)  $\frac{2x^2}{5}$

36)  $\frac{3p^2}{4}$

37)  $8n^{12}$

38)  $512a^{12}$

39)  $2.886 \times 10^8$

40)  $4 \times 10^{-2}$

41) -15

42) -6

43) 15

44) 10

45) 13.9

46) 6

47) 14.8

48) 11.5

49) {3.89}

50) {5.63}

51) 8

52) 8

53) acute scalene

54) obtuse scalene

55)  $29.82 \text{ cm}^2$

56)  $32.4 \text{ mi}^2$

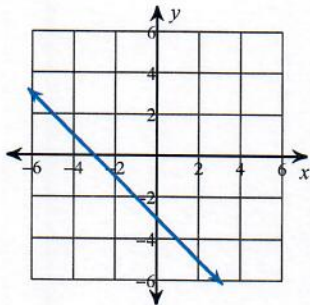
57)  $\frac{1}{5}$

58) 1

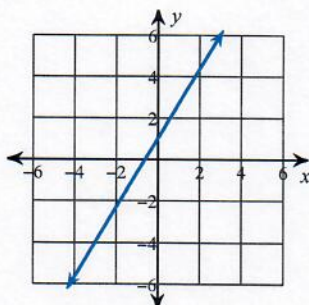
59)  $\frac{9}{4}$

60) 3

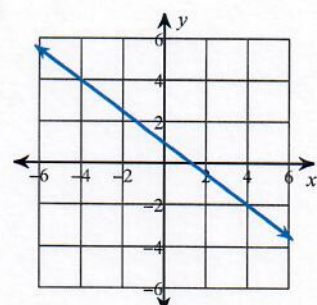
61)



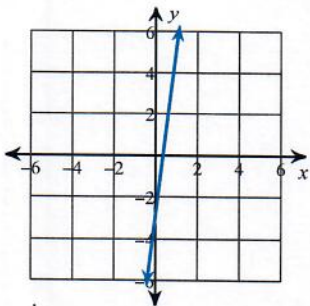
62)



63)



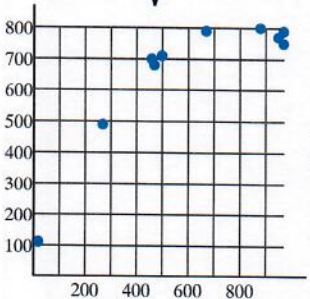
64)



65)  $y = -6x - 5$

66)  $y = x + 5$

67)



Positive correlation  
Nonlinear