WELCOME TO 8TH GRADE MATH

Dear Students and Parents,

As an 8th grader, it is important to be able to solve operations with positive and negative numbers. This is prerequisite material needed to be successful next year. Please complete the attached packet.

- This summer packet must be completed BEFORE the first day of school.

- You are to show all work. (no calculator)

- Packets will be graded as a homework assignment.

- Packets will be collected the first day of school.

- You will be given a test on this material within the first week of school that will count toward your first marking period grade.

Do not expect to complete this packet in one sitting. It is recommended that you work on one worksheet at a time. Plan to take your time when working on these problems. You may use another sheet of paper if there is not enough room to show your work. Showing work demonstrates to your teacher that you fully understand the concepts.

If you need help, you can go to http://www.khanacademy.org and sign up (free) to begin using this on-line learning tool.

Students and Parents: To show that you have read and understood the instructions above, please sign below and return it to your teacher on the first day of school.
Thank you, and have a great summer!

Student Name: _____ (print)

Student Signature: _____

Parent Signature: _____

1-4 Study Guide and Intervention

Adding Integers

To add integers with the same sign, add their absolute values. Give the result the same sign as the integers.

EXAMPLE 1 Find $-3 + (-4)$.

$-3 + (-4) = -7$ Add $|-3| + |-4|$. Both numbers are negative, so the sum is negative.

To add integers with different signs, subtract their absolute values. Give the result the same sign as the integer with the greater absolute value.

EXAMPLE 2 Find $-16 + 12$.

$-16 + 12 = -4$ Subtract $|12|$ from $|-16|$. The sum is negative because $|-16| > |12|$.

EXERCISES

Add.

1. $9 + 16$

2. $-10 + (-10)$

3. $18 + (-26)$

4. $-23 + (-15)$

5. $-45 + 35$

6. $39 + (-38)$

7. $-55 + 81$

8. $-61 + (-39)$

9. $-74 + 36$

10. $5 + (-4) + 8$

11. $-3 + 10 + (-6)$

12. $-13 + (-8) + (-12)$

13. $3 + (-10) + (-16) + 11$

14. $-17 + 31 + (-14) + 26$

Evaluate each expression if $x = 4$ and $y = -3$.

15. $11 + y$

16. $x + (-6)$

17. $y + 2$

18. $|x + y|$

19. $|x| + y$

20. $x + |y|$

16   *Mathematics: Applications and Concepts, Course 3*

Evaluate each expression.

1 *Let n = 3* $12 + n$

2 *Let S = 16* $3S$

3 *Let x = -7* $-x + x$

4 *Let p = -2* p^3

5 *Let m = 500* $\dfrac{m}{100}$

6 *Let q = 47* $q \div 0$

Evaluate. Let **x = -2** *and* **y = -3**

7 $x - y$

8 xy

9 $x^4 + y^3$

10 $\dfrac{x + y}{y - x}$

11 $2x^2y$

12 $-xy$

13 $(2xy)^2$

14 $\dfrac{4}{x + y - 1}$

Rewrite using the distributive property.

10 $e(g+h)$ $eg + eh$

11 $f(j-s)$

12 $5(a+b)$

13 $3(x+6)$

14 $2(5x-1)$

15 $a(x+y+4)$

16 $\dfrac{e+f}{g}$

17 $\dfrac{x+8}{8}$

Rewrite by factoring.

18 $ab + ac$ $a(b+c)$

19 $2b + 2c$

20 $7x + 4x$

21 $15s - 11s$

22 $ax + bx + cx$

Collect like terms to find an equivalent expression.

1. $3x + 6x$

2. $8x + 4y - 5x - 7y$

3. $10x - x$

4. $-9x + x$

5. $13 + 5t + 6y - t - y - 2$

6. $a - 4a$

7. $8x - 5x + 3 + 2y - y - 1$

Remove parentheses to find an equivalent expression.

8. $-(3 + x)$

9. $-(5x + 7)$

10. $-(-2x - 6y + 4)$

11. $-(10x - 17)$

12. $-2(4x + 8)$

Remove parentheses and collect like terms to find an equivalent expression.

13. $6y - (5x - 2y + 8)$

14. $3a + 2a - (5a + 6)$

15. $5y - 2 - (2y - 4)$

16. $20a - 3(6a - 2)$

17. $[3(x + 2) + 2x] - [4(y + 2) - 3(y - 2)]$

Solve using the addition principle.

1 $x + 3 = -12$

2 $m - 5 = -2$

3 $-8 + y = 19$

4 $z + 3.2 = 5.7$

5 $e + \dfrac{1}{2} = 9$

6 $5 = q - 1\dfrac{1}{4}$

7 $t - 14 = 0$

8 $n + 7 = 3$

9 $40 = -2 + x$

10 $5 = b + 2\dfrac{1}{3}$

Solve for x.

1 $9x - 5 = 13$

2 $3x + 12 = 24$

3 $8x - 2 = 4 + 5x$

4 $2(3x + 4) = x + 6$

5 $\dfrac{5x}{7} = 8$

6 $6 - 2(x + 3) = 1 + 4x$

7 $-8x - 10 = -3$

8 $7x + 3x - (10x + 2) = 5 + x$

9 $\dfrac{x}{2} + 6 = 16$

10 $8 + 2(x - 7) = 0$

Types of Slopes

Identify the slope as positive, negative, zero, or undefined from each graph.

1)
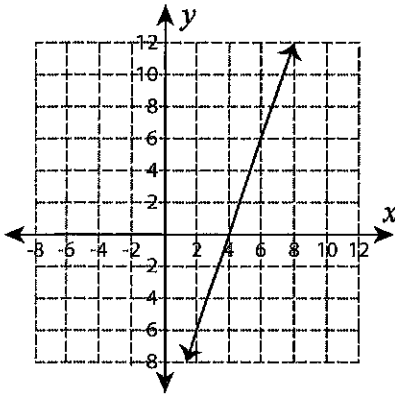
2)
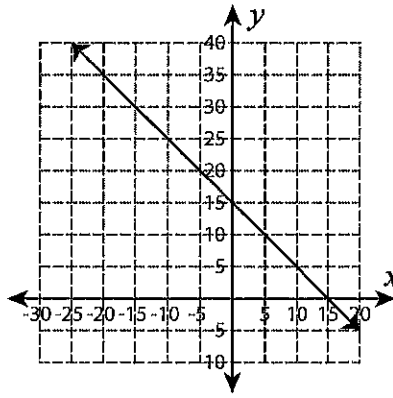
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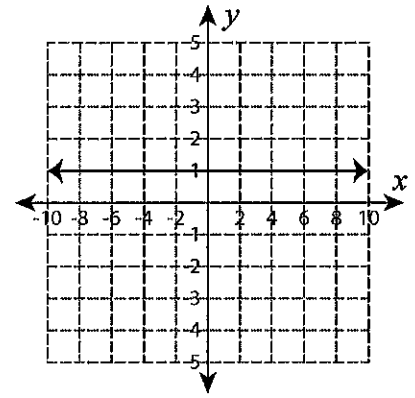
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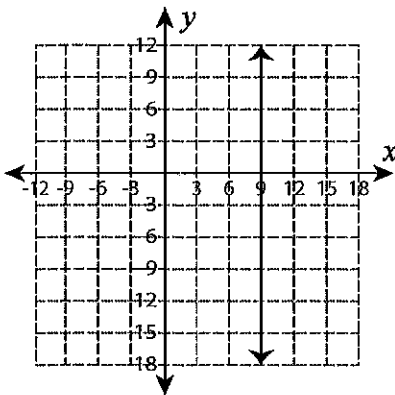
5)
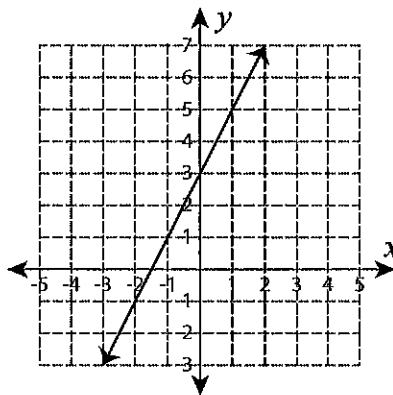
6)
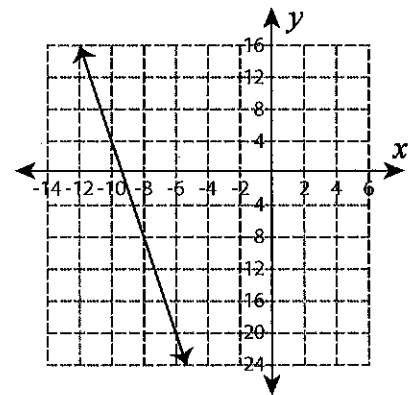
Draw a line through the given coordinates, and identify the type of slope.

1) (10, 15) and (–15, 15)
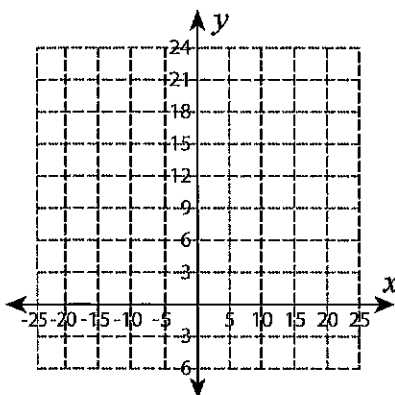
2) (–4, 6) and (2, –18)
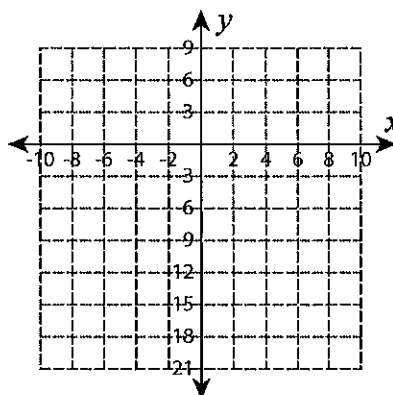
3) (–10, 8) and (–10, –12)
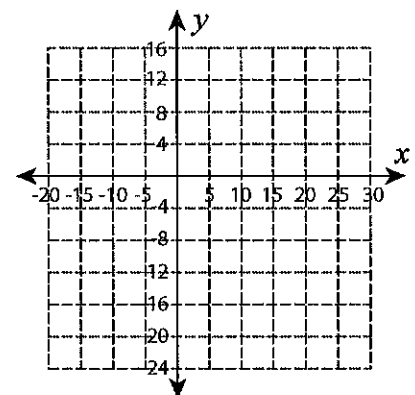
Slope | Graph

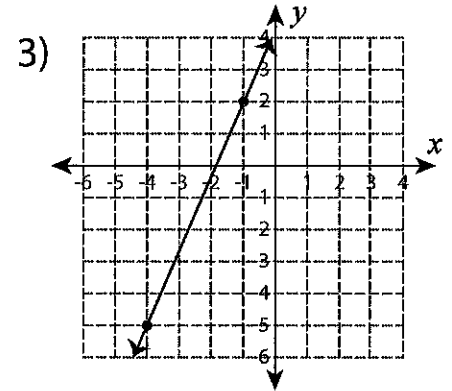Calculate the rise and run to find the slope of each line.

1)

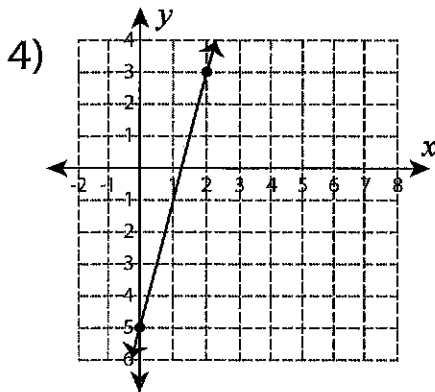
slope = _____

2)

slope = _____

3)

slope = _____

4)
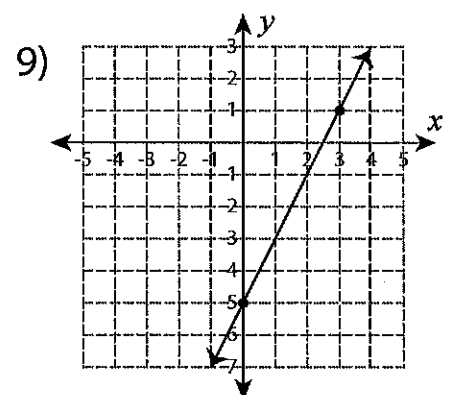

slope = _____

5)

slope = _____

6)

slope = _____

7)

slope = _____

8)

slope = _____

9)
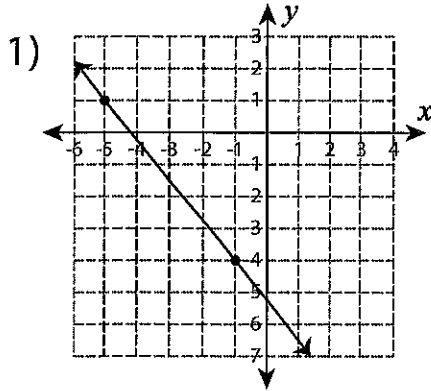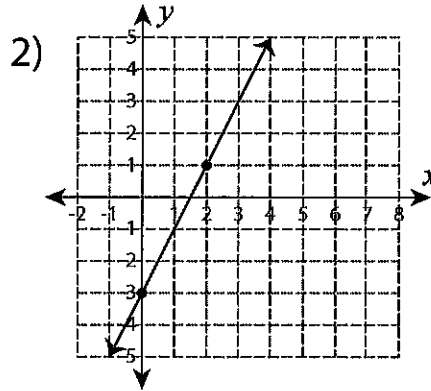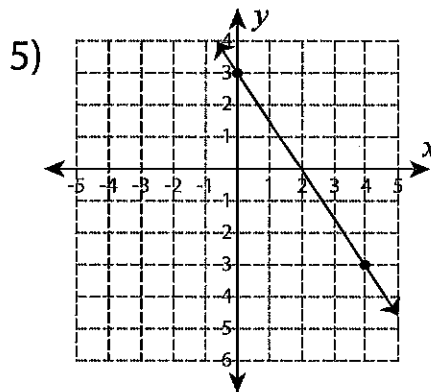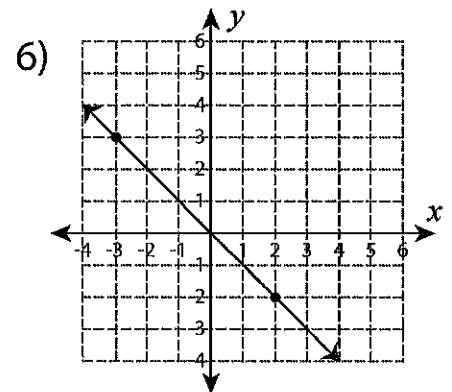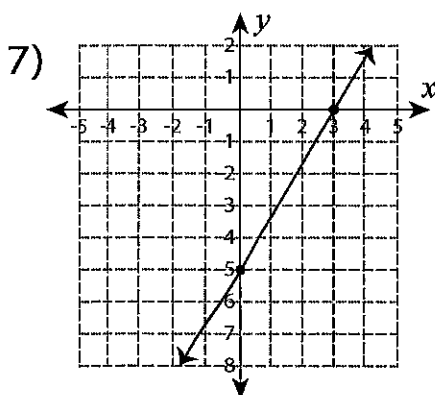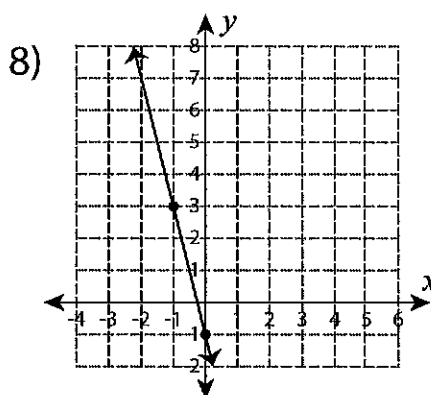
slope = _____

Slope

$$\frac{y_2 - y_1}{x_2 - x_1} \quad \text{formula}$$

Find the slope of each line passing through the given pair of points.

1) $x_1 \ y_1 \qquad x_2 \ y_2$
    (2, 7) and (–4, 1)

$$\frac{1 - 7}{-4 - 2} = \frac{-6}{-6} = 1$$

slope = ___1___

2) (9, 4) and (3, 0)

slope = _____

3) (–6, 1) and (8, –7)

slope = _____

4) (6, 5) and (2, 3)

slope = _____

5) (–3, –8) and (7, 4)

slope = _____

6) (2, 0) and (–4, 6)

slope = _____

7) (–8, 5) and (10, –1)

slope = _____

8) (5, 8) and (7, –2)

slope = _____

9) Find the slope of the line passing through the points (–10, 5) and (2, 5).

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