What Do Man-Eating Fish Use For Barbeques?

Graph each equation on the grid to its right. The graph will cross a letter outside the grid. Find this letter in the string of letters and cross it out each time it appears. When you finish, write the remaining letters in the space below.

1. \(-2x + 5y = 15\)  
2. \(2x + y + 1 = 0\)

3. \(-x - 6y = 30\)  
4. \(9x = 9y + 36\)

5. \(5x - 3y = 0\)  
6. \(y - 4 = 0\)

7. \(4x + 5y = 5\)  
8. \(3x - 8 = y - 4\)

9. \(20y - 60 = 5x\)  
10. \(-2(x + y) = 2 + 5x\)

11. \(x + y = 5 - x\)  
12. \(x + y = y - 5\)

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BFNISTHEMBATPDRNUIUKCYGIOITEAPLD

Answer to title question:

EXTRA: Planning for a Backpacking Trip

Trex is mixing raisins and peanuts to make trail mix. Raisins have 60 calories/oz and peanuts have 150 calories/oz. Trex wants to have a total of 1200 calories.

Let \(x\) = number of ounces of raisins
Let \(y\) = number of ounces of peanuts

Write an equation stating that the total number of calories is 1200. Then graph the equation.

? What are some different combinations of raisins and peanuts that Trex could use?
Why Did the Orchestra Get an "R" Rating?

Write the equation in the form indicated. Circle the letter next to the correct equation, then write this letter in each box containing the exercise number.

In Exercises 1-7, write the equation in slope-intercept form.

1. \( y + 8 = 3(x + 2) \) \( \text{K} \ y = 3x - 6 \) \( \text{H} \ y = 3x - 2 \)

2. \( y - 5 = \frac{1}{2}(x + 4) \) \( \text{T} \ y = \frac{1}{2}x - 1 \) \( \text{D} \ y = \frac{1}{2}x + 7 \)

3. \( y - 9 = -5(x - 2) \) \( \text{A} \ y = -5x + 19 \) \( \text{E} \ y = -5x - 1 \)

4. \( y + 1 = \frac{2}{3}(x - 12) \) \( \text{Y} \ y = \frac{2}{3}x - 4 \) \( \text{U} \ y = \frac{2}{3}x - 9 \)

5. \( y - 2 = \frac{7}{4}(x + 1) \) \( \text{I} \ y = \frac{7}{4}x + \frac{15}{4} \) \( \text{B} \ y = \frac{7}{4}x + \frac{3}{4} \)

6. \( y - 4 = -\frac{1}{5}(x - 3) \) \( \text{T} \ y = -\frac{1}{5}x + \frac{23}{5} \) \( \text{S} \ y = -\frac{1}{5}x + \frac{8}{5} \)

7. \( y - 7 = -\frac{8}{3}(x + 2) \) \( \text{P} \ y = -\frac{8}{3}x - \frac{20}{3} \) \( \text{V} \ y = -\frac{8}{3}x + \frac{5}{3} \)

In Exercises 8-14, write the equation in standard form with integer coefficients.

8. \( y = 2x + 9 \) \( \text{M} \ -2x + y = 9 \) \( \text{L} \ 2x - y = 9 \)

9. \( y = \frac{4}{3}x - 1 \) \( \text{R} \ -4x - 3y = 1 \) \( \text{N} \ -4x + 3y = -3 \)

10. \( y = -\frac{5}{8}x + 3 \) \( \text{S} \ 5x - 8y = 15 \) \( \text{C} \ 5x + 8y = 24 \)

11. \( y = -4x - 15 \) \( \text{L} \ 4x + y = -15 \) \( \text{G} \ -4x + y = 15 \)

12. \( y = \frac{3}{10}x + 8 \) \( \text{B} \ -3x - 10y = 60 \) \( \text{X} \ -3x + 10y = 80 \)

13. \( y = -\frac{16}{5}x + \frac{4}{5} \) \( \text{O} \ 16x + 5y = 4 \) \( \text{E} \ -16x - 5y = 4 \)

14. \( y = \frac{7}{4}x - \frac{1}{8} \) \( \text{R} \ 14x + 8y = -8 \) \( \text{S} \ -14x + 8y = -1 \)

extra: Comparing Slopes

1. Which of these two graphed lines has the greater slope?

2. What is the slope of the speeding bullet graph?

3. What is the slope of the Superman graph?

4. Which is faster, Superman or a speeding bullet?

Linear Equations and Their Graphs:
Changing the Form of a Linear Equation

7.15

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What Did the Policeman Tell The Burglar in the Bathroom?

Find the answer for each exercise in the adjacent answer columns. Write the letter of the exercise in the box containing the number of the answer.

Part 1. Write the equation of the line indicated.

U  Equation of $\overline{AB}$  
0  Equation of $\overline{CD}$  
I  Equation of $\overline{EF}$  
S  Equation of $\overline{GH}$

Part 1 Answers

11  $y = \frac{2}{3}x + 1$
17  $y = -\frac{2}{3}x + 1$
24  $y = -\frac{3}{2}x - 2$
20  $y = -\frac{3}{2}x + 1$
2  $y = -\frac{2}{3}x - 2$

Part 2. Write the slope of a line parallel to the given line.

T  \( y = \frac{7}{4}x - 2 \)  
U  \( y = 8 - 3x \)
O  \(-5x + y = 12\)  
A  \(4x + 7y = 21\)

Part 2 Answers

18  $\frac{12}{5}$  
5  $\frac{7}{4}$
10  $-\frac{7}{4}$
6  $-\frac{4}{7}$
26  $-3$

Part 3. Write the slope of a line perpendicular to the given line.

E  \( y = -\frac{5}{4}x + 1 \)  
H  \( y = 6x + 11 \)
O  \(2x + 5y = 40\)  
T  \(8x - 3y = 15\)

Part 3 Answers

3  $\frac{5}{4}$  
23  $-\frac{3}{8}$
13  $-\frac{1}{6}$
16  $\frac{5}{2}$
4  $\frac{4}{5}$
15  $-\frac{9}{3}$

Part 4. Write an equation for the line that is parallel to the given line and that contains the given point.

W  \( y = 3x - 4; (2, 7) \)  
1  \( y = -4x + 1 \)
Y  \( y = -\frac{1}{2}x + 5; (4, -5) \)  
12  \( y = -\frac{1}{2}x - 1 \)
C  \(4x + y = -9; (-2, 9) \)  
9  \( y = -x + 2 \)
R  \(-5x + 3y = 6; (-3, -8) \)  
15  \( y = -\frac{1}{2}x - 3 \)
P  \(x + y = 7; (-4, 0) \)  
7  \( y = 3x - 2 \)

Part 4 Answers

18  \( y = \frac{5}{3}x - 3 \)
10  \( y = 3x + 1 \)
19  \( y = -4x - 7 \)
14  \( y = \frac{5}{3}x - 8 \)

Part 5. Write an equation for the line that is perpendicular to the given line and that contains the given point.

U  \( y = -\frac{1}{3}x + 4; (2, 5) \)  
14  \( y = -\frac{5}{2}x + 7 \)
T  \( y = \frac{2}{5}x - 3; (2, -3) \)  
20  \( y = -4x - 5 \)
P  \( y = \frac{x}{4} + 15; (-3, 7) \)  
9  \( y = -\frac{1}{5}x + 5 \)
M  \(3x + 2y = -10; (-9, -2) \)  
19  \( y = -4x - 3 \)
N  \(5x - y = 16; (0, 0) \)  
22  \( y = -\frac{1}{5}x \)

Part 5 Answers

3  \( y = \frac{2}{3}x + 4 \)
25  \( y = 3x - 5 \)
12  \( y = -\frac{5}{2}x + 2 \)
7  \( y = 3x - 1 \)
5  \( y = \frac{2}{3}x + 6 \)

Linear Equations and Their Graphs: Parallel and Perpendicular Lines
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Did You Hear About the Mathematician Who Wanted to Make a Fruit Salad, So He Bought Some Apples and Oranges ______?

TO FIND THE FINAL WORDS OF THIS QUESTION: Cross out the letter pair next to each correct answer. For each letter pair that you DON'T cross out, write the uppercase letter in the box containing the lowercase letter.

Part A. Write an equation for the line that is parallel to the given line and contains the given point.
In Exercises 1-2, write your answer in point-slope form.
1. \( y = \frac{4}{3}x - 7; (7,2) \)   e: D  \( y + 7 = \frac{4}{3}(x - 2) \)   i: B  \( y - 2 = \frac{4}{3}(x - 7) \)
2. \( 2x + 5y = 15; (4, -4) \)   r: V  \( y + 4 = -\frac{2}{5}(x - 4) \)   q: A  \( y + 4 = \frac{4}{5}(x - 4) \)

In Exercises 3-4, write your answer in slope-intercept form.
3. \(-3x + y = 8; (-1,5) \)   i: E  \( y = 3x - 5 \)   s: S  \( y = -\frac{1}{4}x + 3 \)
4. \( x - 4y = 4; (6, 3) \)   f: L  \( y = 3x + 8 \)   a: T  \( y = \frac{1}{4}x + \frac{3}{2} \)

In Exercises 5-6, write your answer in standard form with integer coefficients.
5. \( 2x + 3y = 30; (2, -5) \)   p: N  \( 2x + 3y = -11 \)   f: O  \( -5x + y = 2 \)
6. \( y - 5x + 2 = 0; (-3, -8) \)   k: E  \( 2x - 3y = 8 \)   j: V  \( -5x + y = 7 \)

Part B. Write an equation for the line that is perpendicular to the given line and contains the given point.
In Exercises 7-8, write your answer in point-slope form.
7. \( y = -\frac{1}{2}x + 3; (-4, 7) \)   b: R  \( y + 1 = -\frac{3}{8}(x - 6) \)   a: A  \( y - 7 = -2(x - 4) \)
8. \( 8x - 3y = 12; (6, -1) \)   l: T  \( y - 7 = 2(x + 4) \)   p: E  \( y + 1 = \frac{4}{3}(x - 6) \)

In Exercises 9-10, write your answer in slope-intercept form.
9. \( 2x + 5y = 10; (4, 9) \)   l: D  \( y = \frac{5}{2}x + 4 \)   g: R  \( y = \frac{1}{6}x + \frac{7}{6} \)
10. \( 6x - y - 5 = 0; (-3, 2) \)   o: F  \( y = -\frac{1}{6}x + \frac{3}{2} \)   j: L  \( y = \frac{5}{2}x - 1 \)

In Exercises 11-12, write your answer in standard form with integer coefficients.
11. \( 4x + 3y = 24; (-5, 0) \)   b: N  \( 7x + 2y = -12 \)   r: N  \( -3x + 4y = 15 \)
12. \( 2x - 7y + 21 = 0; (-1, -4) \)   j: R  \( 3x - 4y = 8 \)   h: T  \( 7x + 2y = -15 \)

Part C. Write an equation for the line that contains the two given points.
Write your answers in slope-intercept form.
13. \((3, 2)\) and \((9, 12)\)   o: P  \( y = \frac{5}{3}x - 6 \)   m: O  \( y = \frac{5}{3}x - 3 \)
14. \((-1, -4)\) and \((8, -8)\)   r: R  \( y = 3x - 8 \)   n: A  \( y = -3x - 6 \)
15. \((-2, 0)\) and \((-7, 15)\)   e: F  \( y = -\frac{4}{9}x - \frac{40}{9} \)   h: D  \( y = -\frac{4}{9}x + 5 \)

Linear Equations and Their Graphs:
Equations for Parallel and Perpendicular Lines in Different Forms

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