

Student: _____
Date: _____
Time: _____

Instructor: Barbara Rademacher
Course: Fall 2009 AAS Math
Book: Blitzer: Thinking Mathematically,
4e

Assignment: Practice Exam 2

1. Evaluate the given expression for $x = 4$.

$$x^2 + 6x - 7$$

The answer is .

Answer: 33

2. Write the English phrase as an algebraic expression. Then, simplify the expression. Let x represent the number.

The difference between the product of four and a number and thrice the number.

What is the algebraic expression?

(Do not simplify.)

What is the simplified expression?

Answers $4x - 3x$
 x

3. Solve and check the following equation. Begin your work by rewriting each equation without fractions

$$\frac{3y}{10} - 4 = \frac{y}{5} + 3$$

The solution set is $\{\text{}\}$.

Answer: 70

4. The tax on a property with an assessed value of \$75,000 is \$900. Using a proportion, find the tax on a property with an assessed value of \$108,000.

\$
(Round to two decimal places.)

Answer: 1296.00

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5. Find the slope of the line passing through the pair of points or state that the slope is undefined. Then indicate whether the line through the points rises, falls, is horizontal, or is vertical.

$(-5,6)$ and $(2,4)$

What is the slope of the line?

(Type an integer or a simplified fraction. Type N if the slope is undefined.)

Indicate whether the line through the points rises, falls, is horizontal, or is vertical.

- The line is vertical.
 The line is horizontal.
 The line rises from left to right.
 The line falls from left to right.

Answers $-\frac{2}{7}$

the fourth choice

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6. Put the equation in slope-intercept form. Find the slope. Then use the slope and y-intercept to graph the line.

$$7y = 5x$$

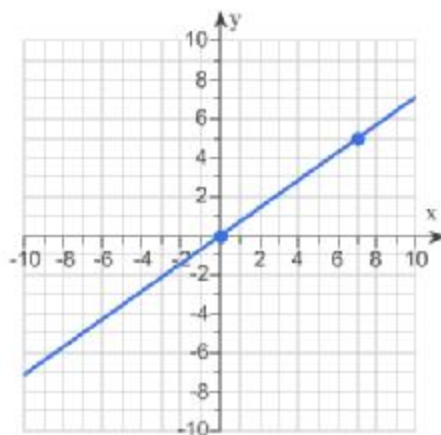
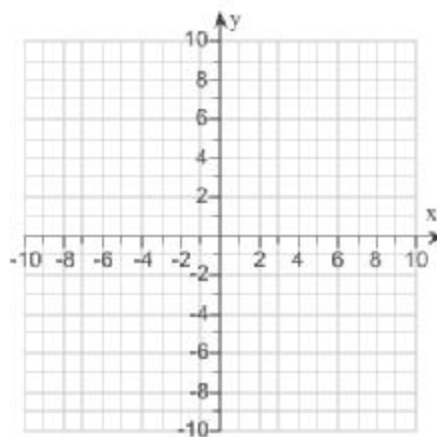
The equation in slope-intercept form is $y = \square$.
(Use integers or fractions for any numbers in the equation. Simplify your answer.)

The slope is \square .
(Type an integer or a fraction. Simplify your answer.)

Use the slope and y-intercept to graph the line.



Answers $\frac{5}{7}x$
 $\frac{5}{7}$

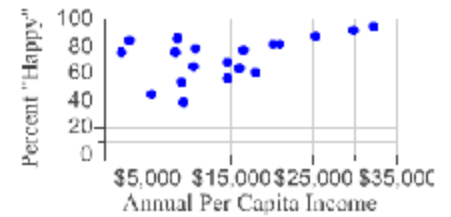


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7. The scatter plot of data from 20 countries shows the relationship between a country's annual per capita income and the percentage of people in that country who call themselves "happy." Use the scatter plot to determine whether the following statement is true or false.



A reasonable estimate of the correlation coefficient for the data is 0.5.

Is the statement true or false?

- False
 True

Answer: the second choice

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8. The data below show the number of years of education for seven parent-child pairs.
- Determine the correlation coefficient between years of education of parent and child.
 - Find the equation of the regression line for years of education of parent and child.
 - Approximately how many years of education can we predict for a child with a parent who has 16 years of education?

| Respondent | A | B | C | D | E | F | G |
|----------------------------------|----|----|---|----|----|----|----|
| Years of education of parent (x) | 12 | 9 | 7 | 11 | 13 | 11 | 12 |
| Years of education of child (y) | 13 | 12 | 7 | 17 | 17 | 11 | 19 |

- a. Determine the correlation coefficient.

$$r = \square$$

(Do not round until the final answer. Then round to two decimal places as needed.)

- b. Find the equation of the regression line, $y = mx + b$. First find the slope, m .

$$m = \square \text{ (Round to two decimal places as needed.)}$$

Now calculate the y-intercept, b , of the regression line.

$$b = \square \text{ (Round to two decimal places as needed.)}$$

- c. Approximate the number of years of education for a child with a parent who has 16 years of education.

$$y \approx \square \text{ years}$$

(Round to the nearest year as needed.)

Answers 0.8

1.63

-3.75

22

9. When five times a number is decreased by 4, the result is 41. What is the number?

The number is \square .

Answer: 9

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10. Solve the proportion.

$$\frac{18}{x} = \frac{6}{4}$$

The solution set is $\{\square\}$.

(Type an integer or a fraction. Simplify your answer.)

Answer: 12

11. Solve the proportion for x.

$$\frac{x}{9} = -\frac{3}{2}$$

The solution set is $\{\square\}$. (Type an integer or a simplified fraction.)

Answer: $-\frac{27}{2}$

12. The formula $C = \frac{5}{9}(F - 32)$ expresses the relationship between Fahrenheit temperature, F, and Celsius temperature, C. Use the formula to convert 95°F to its equivalent temperature on the Celsius scale.

$$95^\circ\text{F} = \square^\circ\text{C}$$

Answer: 35