

Chapter 3 Practice Test

Write the letter for the correct answer in the blank at the right of each question.

1. What is the slope (grade) of a road that rises 6 feet for every horizontal change of 100 feet?

"rise" $\rightarrow \Delta y = 6$ $\frac{6}{100} \div 2$
 "run" $\rightarrow \Delta x = 100$ $\frac{100}{100} \div 2$

1. $\frac{3}{50}$

2. What is the constant rate of change between the two quantities in the table?

Time (x)	15	30	45	60
Number of Pages Read (y)	10	20	30	40

$m = \frac{y_2 - y_1}{x_2 - x_1} = \frac{20 - 10}{30 - 15} = \frac{10}{15} = \frac{2}{3}$

2. $m = \frac{2}{3}$

3. What is the slope of the line that passes through the points $E(-1, 4)$ and $F(2, 6)$?

$m = \frac{6 - 4}{2 - (-1)} = \frac{2}{3}$

3. $m = \frac{2}{3}$

4. The cost of nails varies directly with the number of pounds bought. If 4 pounds of nails cost \$11.60, what is the cost of 3.5 pounds?

$y = kx$

$\frac{11.60}{4} = \frac{k(4)}{4}$ $k = 2.90$

$y = (2.9)x$
 $y = (2.9)(3.5) = 10.15$

4. \$ 10.15

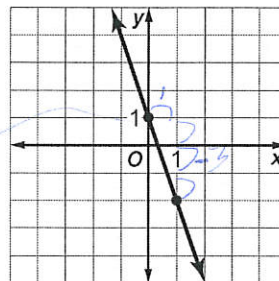
5. What are the slope and y-intercept for the graph of $y - 4x = -2$?

$y - 4x = -2$ $y = mx + b$
 $\begin{array}{r} y - 4x = -2 \\ +4x \quad +4x \\ \hline y = 4x - 2 \end{array}$ $m = 4$
 $b = -2$

5. $m = 4$
 $b = -2$

6. What is the equation in slope-intercept form for the graph shown?

$y = mx + b$
 $y = (-3)x + (1)$ $b = 1$



$m = \frac{-3}{1} = -3$

6. $y = -3x + 1$

7. What are the x- and y-intercepts for the graph of $-3x + 5y = -15$?

x-int (y=0) $-3x + 5(0) = -15$
 $-3x = -15$ $x = 5$
y-int (x=0) $-3(0) + 5y = -15$
 $5y = -15$
 $y = -3$

7. $(5, 0)$
 $(0, -3)$

Chapter 3 Practice Test

(continued)

SCORE _____

8. At store A, pencils are sold individually. The cost y of x pencils is represented by the equation $y = 0.55x$. The costs of pencils at store B are shown in the table.

Number of Pencils (x)	6	12	18	24
Cost (y)	\$3.06	\$6.12	\$9.18	\$12.24

Which of the following statements is true?

- F. The pencils at store A cost more.
- G. The pencils at store A cost \$0.27 each.
- H. The pencils at store B cost \$0.30 each.
- I. The pencils at store B cost more.

$b=0$
 $m = \frac{6.12 - 3.06}{12 - 6} = \frac{3.06}{6} = 0.51$
 store B
 $y = 0.51x$

8. F

9. What is the equation in slope-intercept form for the line that passes through the points $(-2, -1)$ and $(1, 5)$?

$m = \frac{5 - (-1)}{1 - (-2)} = \frac{6}{3} = 2$
 $y = mx + b$
 $-1 = (-2)(2) + b$
 $-1 = -4 + b$
 $b = 3$

9. $y = 2x + 3$

10. What is the solution of the system of equations?

$y - 2x = -6$
 $y - 4x = 0$
 $\frac{+4x + 4x}{y = 4x}$
 $4x - 2x = -6$
 $2x = -6$
 $x = -3$
 $y - 4(-3) = 0$
 $y + 12 = 0$
 $y = -12$

10. $(-3, -12)$

11. Theo is renting two kinds of tables for his party. One type of table seats 4 people and the other seats 6 people. If 36 people will be at his party and he rents 7 tables, how many of each type of table does he rent?

$x + y = 7$
 $4x + 6y = 36$

11. 3 4-person t.
4 6-person t.

12. Geneva is saving for a new dress. She already has \$20 saved and intends to save \$7 each week. The equation for the amount of money y she has saved is $y = 7x + 20$, where x is the number of weeks. What do the slope and y -intercept represent?

12. $m = \$7$ each week
 $b = \$20$ saved

13. Solve the system by graphing.

① $y = -2x + 3$
 ② $y = -x - 1$

$x + y = 7$
 $-x \quad -x$
 $y = 7 - x$
 $4x + 6y = 36$
 $4x + 6(7 - x) = 36$
 $4x + 42 - 6x = 36$
 $-2x = -6$
 $x = 3$
 $3 + y = 7$
 $y = 4$

13. $(-3, -3)$

