NAME _____ DATE _____ PERIOD _____

2 Chapter 2 Test, Form 3

SCORE _____

Assessment

1. Translate the following into an equation.
A number x is decreased by 45. The result is then divided by 12. Then 20 is added to this new result to give a final result of five times the difference of 32 and the number x.

1. $\frac{x - 45}{12} + 20 = 5(32 + x)$

2. Translate the following equation into a verbal sentence.
$5(2x + 3y) = y^2 - 2x^3$

2. Five times the sum of two times x and three times y equals the square of y minus two times the cube of x.

For Questions 3–7, solve each equation.

3. $n + 39 = 12$

3. -27

4. $w + (-8) = -21$

4. -13

5. $-6n = 16$

5. $-2\frac{2}{3}$

6. $\frac{3}{4}h = -\frac{45}{52}$

6. $-1\frac{2}{13}$

7. $-\frac{a}{6} + 7 = -14$

7. 126

8. If $x - 5 = 12$, what is the value of $x - 9$?

8. 8

For Questions 9 and 10, write an equation for each problem. Then solve the equation.

9. Three-fifths of what number equals one?

9. $\frac{3}{5}x = 1$; $\frac{5}{3}$

10. The product of 2 more than a number and 10 is 36 more than 8 times the number. What is the number?

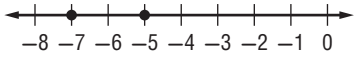
10. $(x + 2)10 = 8x + 36$; 8

11. Evaluate $2|m - 3x| - p$ if $m = -1$, $x = 2$, and $p = 4$.

11. 10

12. Solve $2\left|\frac{x}{2} + 3\right| = 1$. Then graph the solution set.

12. $\{-7, -5\}$



13. Shyam invested money in the stock market. In the first year, his stock increased 20%. He paid his stock broker $300 and then lost $450. He withdrew $500, and then his remaining investment doubled. Shyam's investment is now worth $7100. How much was Shyam's original investment?

13. $4000

14. Use cross products to determine whether the pair of ratios $\frac{42}{48}$ and $\frac{63}{72}$ form a proportion. Write *yes* or *no*.

14. yes

15. A blueprint for a house states that 2 inches represents 8 feet. If the width of a window is 2.5 inches on the blueprint, what is the width of the actual window?

15. 10 ft

NAME _____ DATE _____ PERIOD _____

2 Chapter 2 Test, Form 3 *(continued)*

16. Solve the proportion $\frac{t+4}{t-2} = \frac{1}{4}$. **16.** -6

For Questions 17 and 18, solve each equation.

17. $6 - 2y = 7y + 13$ **17.** $-\frac{7}{9}$

18. $5(7 - a) - 3(a + 4) - 4 = 4(a - 3) + 7$ **18.** 2

19. Solve $ax - n = r$ for x. **19.** $x = \frac{r+n}{a}$

20. Solve $\frac{4x+t}{r} = y$ for x. **20.** $x = \frac{ry-t}{4}$

21. State whether the percent of change is a percent of *increase* or a percent of *decrease*. Then find the percent of change.

original: 75, new: 84 **21.** increase; 12%

22. A jacket costs \$75.00 retail. A warehouse outlet discounts the price by 20%. If the sales tax is 6%, find the final price. **22.** \$63.60

23. Calvin invested \$7500 for one year, part at 12% annual interest and the rest at 10% annual interest. His total interest for the year was \$890. How much money did he invest at 12%? **23.** \$7000

24. Two airplanes leave the Atlanta airport at the same time, traveling in opposite directions. One plane travels 30 miles per hour faster than the other. After 3 hours, the planes are 3150 miles apart. What is the rate of each plane? **24.** 510 mph, 540 mph

25. PHYSICS A ball is thrown straight up at an initial velocity of 53 feet per second. In the first 1.5 seconds, it travels 42 feet. The formula $x = \left(\frac{u+t}{n}\right) t$ represents the vertical distance x that an object travels in t seconds, where u represents the initial velocity of the object and n represents the velocity of the object at the end of t seconds. Find the velocity of the ball at the end of 1.5 seconds. **25.** 1.95 ft/s

Bonus Paloma Rey drove to work on Wednesday at 40 miles per hour and arrived one minute late. She left home at the same time on Thursday, drove 45 miles per hour, and arrived one minute early. How far does Ms. Rey drive to work? **B:** 12 mi