

Name _____

Score _____

Cumulative Test 14A

Math Course 3
Also take Power-Up Test 14

1. Robert bought a hard drive for 30% off the regular price. The sale price was \$42.00. What was the regular price?

2. In one year the student enrollment increased from 560 to 588. This was an increase of what percent?

3. When a 6-foot tall fence pole casts a 10-foot shadow, a pine tree casts a 45-foot shadow. How tall is the tree?

4. Drew kept track of the amount of time and number of pages he read each night. Does the table show direct variation? If so, give the constant of variation. If not, explain why not.

Minutes Reading	Pages Read
12	6
20	10
16	8
30	15

5. Use a unit multiplier to convert \$12.00 per hour to dollars per minute. Show your work.

6. Solve and graph on a number line: $x + 4 \geq 1$

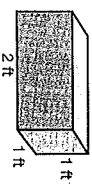
7. Graph the points (1, -2) and (3, 2). Then draw a line that extends through the points. Write the equation of the line in slope-intercept form.

8. A 4-foot diameter circle is divided into four congruent sectors. What is the area of each sector in square inches? (Use 3.14 for π .)

9. Convert $\frac{7}{12}$ to a percent and to a decimal.

10. Sketch a 30-60-90 triangle. What is the ratio of the lengths of the shortest to longest sides?

11. Tina wants to wrap a big box. What is the minimum amount of wrapping paper needed to cover all six faces of the box?



12. A tetherball on the end of a 7-foot rope swings around a pole. The maximum distance the tetherball travels in one full swing is about

- A. 14 ft
- B. 22 ft
- C. 44 ft
- D. 360 ft

13. There are two blue socks and one gray sock in a drawer. Without looking, Juan takes two socks.
a. Find the sample space of the experiment. (Use the abbreviations B₁, B₂, and G.)
b. What is the probability Juan takes two blue socks?

14. Solve: $0.05x - 0.3 = 0.2$

For questions 15-20, simplify the expression.

15. $\frac{12w^2x^3y}{6wx^2y}$

16. $3x + 3 - x - 1$

17. $\frac{4}{5} - \frac{3}{4} \cdot \left(\frac{3}{4}\right)^{-1}$

18. $\frac{7.5 \times 10^{-8}}{3 \times 10^3}$

19. $(-5) + (-2)(-3) + (-1)$

20. $\frac{1.2 + 0.24}{(0.2)^2}$

Cumulative Test 14A

9%

Regular \$	100	X
Discount	30	
Sale \$	70	442

$$100 = \frac{X}{70}$$

$$100 \cdot 70 = 4200$$

$$4200 \div 70 = 60$$

2. Lost Year Increase

%	#
100	560
X	28

This Year

$$\frac{588}{560} = \frac{28}{X}$$

$$100 \cdot 28 = 2800$$

$$2800 \div 560 = 5\%$$



$$\frac{6}{45} = \frac{X}{45}$$

$$45 \cdot 6 = 270$$

$$270 \div 10 = 27 \text{ feet}$$

4. Yes, because they all divide to equal $\frac{1}{2}$.

$$12 \div 6 = .5$$

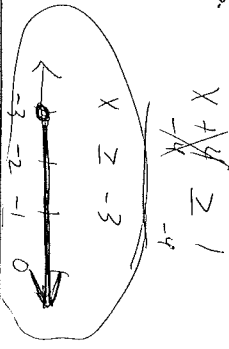
$$20 \div 40 = .5$$

$$16 \div 32 = .5$$

$$30 \div 60 = .5$$

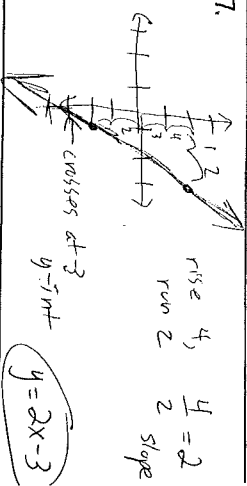
Constant = $\frac{1}{2}$

$$\frac{12}{60} = \frac{1}{5} = .20 \text{ per min.}$$



6. $X + 4 \geq 1$

$$X \geq -3$$



7. rise 4, run 2

$$\frac{4}{2} = 2$$

slope

$$y = 2x - 3$$

8. Area in inches $\div 4$

$$\pi \cdot r^2 \div 4$$

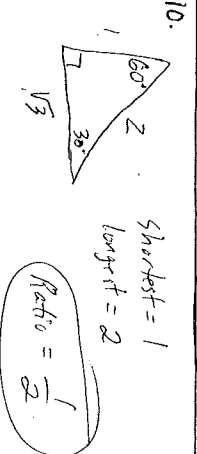
$$4' = 48 \text{ in.}$$

$$\frac{48 \text{ in.}}{2} = 24 \text{ in.}$$

$$(3.14 \cdot 24^2) \div 4 = 452.16 \text{ in}^2$$

9. $\frac{7}{12}$ to decimal = $.58\bar{3}$

$\frac{7}{12}$ to percent = $58.\bar{3}\%$



shortest = 1

longest = 2

Ratio = $\frac{1}{2}$



11. Front $2 \times 1 = 2$ Right $1 \times 1 = 1$ Top $2 \times 1 = 2$

Back $2 \times 1 = 2$ Left $1 \times 1 = 1$ Bottom $2 \times 1 = 2$

$$2 + 2 + 1 + 1 + 2 + 2 = 10 \text{ ft}^2$$

12. Circumference

$$2 \cdot \pi \cdot r$$

$$2 \cdot 3.14 \cdot 7 = 43.96 \text{ ft}$$

13. A. Sample Space

B_1, B_2, B_1, G

B_2, G, B_2, B_1, G

G, B_1, G, B_2

b. $\frac{2}{9}$

14. $.05x - .3 = .2$

$$+.3 \quad +.3$$

$$.05x = .5$$

$$.5 \div .05 = 10$$

X = 10

15. $12w^2xy^3 = 2w^2xy^3$

$$\frac{12w^2xy^3}{6wxy^2} = \frac{2w^2xy^3}{w^2xy^3}$$

Ratio = $2wx$

16. $3x + 3 - 1x - 1$

$$2x + 3 - 1$$

17. $2x + 2$

18. $\frac{4}{5} - \frac{3}{5} \cdot \left(\frac{3}{4}\right)^{-1}$

Flip

$$\frac{4}{5} - \frac{3}{5} \cdot \frac{4}{3}$$

$$\frac{4}{5} - \frac{12}{15}$$

$$\frac{4}{5} - \frac{4}{5} = 0$$

19. $7.5 \times 10^{-8} \div 3 \times 10^{-3}$

$$\frac{7.5}{3} \times \frac{10^{-8}}{10^{-3}} = 2.5 \times 10^{-5}$$

20. $(-5) + (-2)(-3) + (-1)$

$$(-5) + 6 + (-1)$$

$$1 + (-1) = 0$$

21. $1.2 + .24 = 1.44$

$$\frac{1.2 + .24}{(0.2)^2} = \frac{1.44}{.04} = 36$$