Name: _____ Period: _____ Date: _____

Math 8 Unit 2 Summative Test REVIEW

Simplify the following expressions:

1. $5x + 13 - 9x + 12$

$5x - 9x + 13 + 12$

$-4x + 25$

2. $-4(2x + 9)$

$-8x - 36$

3. $5 - 2(5x - 1) + 8$

$5 - 10x + 2 + 8$

$-10x + 5 + 2 + 8$

$-10x + 15$

Simplify the following using exponent rules:

4. $x^2y^4 \bullet xy^2$

x^3y^6

5. $\frac{x^5y^2z^8}{xy^2z^2}$

x^4z^6

6. $(x^4y^3z)^2$

$x^8y^6z^2$

7. $\frac{(x^4y^5z^2)(xy)}{x^2y^2}$ $= \frac{x^5y^6z^2}{x^2y^2}$

$x^3y^4z^2$

8. $\frac{18x^5y^6z}{-6x^{-3}y^5}$ $= -3x^8yz$

Solve the following equations:

9. $-3x = -21$

$\frac{-3x}{-3} = \frac{-21}{-3}$

$x = 7$

10. $x - 22 = -2$

$+22 \quad +22$

$x = 20$

11. $6x - 22 = 14$

$+22 \quad +22$

$\frac{6x}{6} = \frac{36}{6}$

$x = 6$

12. $43(4x - 9) = 2(4x + 9) + 4x$

$172x - 387 = 8x + 18 + 4x$

$172x - 387 = 12x + 18$

$160x = 405$

$x = 2.53$

12. $3 - 13x + 9x = 15$

$3 - 4x = 15$

$-3 \quad -3$

$-4x = 12$

$x = -3$

13. $5(-3x + 4) = 65$

$-15x + 20 = 65$

$-20 \quad -20$

$-15x = 45$

$x = -3$

14. $33 - 4x = -9x + 3$

$+9x \quad +9x$

$33 + 5x = 3$

$-33 \quad -33$

$5x = -30$

$x = -6$

15. $7 + \frac{x}{2} = -4$

$-7 \quad -7$

$2 \cdot \frac{x}{2} = -11 \cdot 2$

$x = -22$

16. $7x + 3 = 2(3x + 4) + x - 10$

$7x + 3 = 6x + 8 + x - 10$

$7x + 3 = 7x - 2$

$3 = -2$

No solution

17. Blake weighs 145 pounds and wants to gain 2.5 pounds a month. Josh weighs 190 pounds and wants to lose 5 pounds a month. Write and solve an equation to find at what number of months they will weigh the same.

$145 + 2.5m = 190 - 5m$

$+5m \quad +5m$

$145 + 7.5m = 190$

$-145 \quad -145$

$\frac{7.5m}{7.5} = \frac{45}{7.5}$

6 months

18. The sum of 3 consecutive integers is 66.

a. Write an equation to represent this situation: $x+x+1+x+2=66$

b. What are the three integers? 21, 22, 23

$3x+3=66$

$3x=63$

$x=21$

19. There are 105 pretzels in a 2 pound of m&m's. Write and solve a proportion that you can use to find the number of m&m's in a 33 pound bag.

$\frac{105}{2}=\frac{x}{33}$

$2x=3465$

1,732.5 m&m's

20A 6 foot tall man standing next to a 192 foot tall building casts a 3 foot shadow. How big is the shadow cast by the building?

$\frac{6}{3}=\frac{192}{x}$

$576=6x$

$x=96$ ft shadow

21. A cookie recipe calls for three and a half cups of flour to make fifty cookies. If you wanted to make seventy cookies, how many cups of flour would you need? Write and solve a proportion

$\frac{3.5}{50}=\frac{x}{70}$

4.9 cups of flour

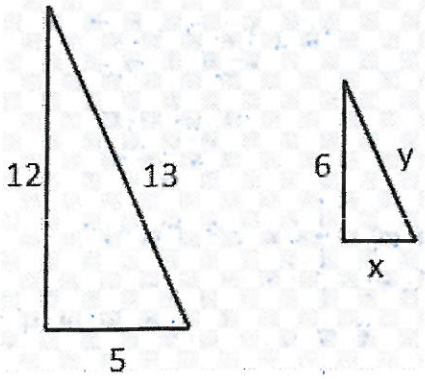
22. You have an isosceles triangle with a base of 20 and legs that are ¾ of the base. If you enlarged the triangle by 315%, what would the new side lengths of the triangle be?

$20 \cdot \frac{3}{4}=\frac{60}{4}=15$

$20 \cdot 3.15 = 63$

$15 \cdot 3.15 = 47.25$

23. The following shapes are similar. Find the missing side lengths



$\frac{12}{6}=\frac{5}{x}$

$30=12x$

$x=2.5$

$\frac{12}{6}=\frac{13}{y}$

$18=12y$

$y=1.5$

6.5

24. 45 is what percent of 120?

$\frac{45}{120}=\frac{x}{100}$

$120x=4{,}500$

$x=37.5\%$

25. What number is 22% of 870?

$\frac{x}{870}=\frac{22}{100}$

$19140=100x$

$x=191.4$