Math 8 Final Exam

1. Find the missing side of a right triangle if it has a hypotenuse of 20ft and one leg measuring 16 ft.

$A. 12ft B. 15ft$ $C. 10ft D. 14ft$

2. Simplify: $6^{-5} ∙ 6^{7}$

*A.* $6^{-2}$ *B.* $6^{35}$ *C.* $36^{-12}$ *D.* $6^{2}$

3. Simplify$\left(3-5\right)^{-2}$

*A.* $\frac{1}{16}$ *B.* 4 *C.* $\frac{1}{4}$ *D.* -4

4. Determine which ordered pair is a solution of the equation y + 3x = 13

*A.* (1,4) *B.* (4,2) *C.* (5,2) *D.* (4,1)

5. Which graph is NOT a function?

*A. B. C. D.*

6. Find the value of “x” 8x – 3 = 3x + 17

*A. 3 B. 4 C. 5 D. -8*

7. Evaluate the function f(x)  5x  4 for x  -2

 A. -14 B. 6 C. -10 D. -6

8. In 2011, the population of the Texas was about 3.62 x 107. The population of Rhode Island was about 2.11 x 105. About how much more was the population of Texas than Rhode Island?

 A. 3.5989 x 107 B. 3.5989 x 106 C. 3.5989 x 105 D 1.51 x 102

9. Find the volume of the Triangular Prism below.



1. 240ft— B. 80ft— C. 120ft— D. 360 ft—

10. Simplify (−3)5 × (−3)4.

 A (-3) B (−3)9  C (−3)20 D (9)9

11. $\frac{4.5×10^{9}}{0.5×10^{2}}$ Write in Scientific Notation

 A. $9×10^{11}$ B $9×10^{5}$ C $9×10^{7}$ D $40×10^{5}$

12. Simplify (152)7

A. $15^{14}$ B $15^{13}$ C $15^{16}$ D $30^{9}$

13. Which is the product of (9.4 x 103) x (6.2 x 109) in scientific notation?

 A 5.828 B 58.28 x 1011 C 5.882 x 1012 D 5.828 x 1013

14. Find the domain for the given coordinates: (6, 3), (-2,4), (7,1), (9, -3)

 A. (6,3,-2,4) B (5,3,7,1) C (6,-2,7,9) D (3,4,1,-3)

15. Find the value of “x” 10(x – 3) = 6(x – 4)

 A. 1.5 B. 2 C. 3 D. 2.5

USE THE FIGURE BELOW TO ANSWER QUESTIONS 16-18



16. What is the measure of angle 2?

1. 57 B. 123 C. 133 D. 180

17. What is the measure of angle 3?

1. 180 B. 133 C. 123 D. 90

18. Angles 2 & 3 are classified as what kind of angles?

1. Supplementary B. Complimentary C. Adjacent D. Vertical

19. Solve the system using elimination: 3x + 2y = -44

 -3x + 4y = 2

A. (-10,-7) B. (-7,-10) C. (10,7) D. (7,10)

20. Find the volume of a cone that has a radius of 3 inches and a height of 9 inches.

1. 84.78 cubic in B. 27 cubic in C. 8478 cubic in D. 254.34 cubic in

USE THE EQUATION ***6x+3y = 24*** TO ANSWER QUESTIONS 21-24

21. What is the x-intercept?

1. X=3 B. X=6 C. X= 2/3 D. X=4

22. What is the y-intercept?

1. Y=9 B. Y=6 C. Y=8 D. Y=0

23. How is the equation written in slope intercept form?

1. Y= 6x + 18 B. Y= -2x + 8 C. Y= 2x +18 D. Y= 3x + 6

24. What is the slope of the equation?

1. 6 B. 3 C. -2 D. 8

25. Find the solution to this system of equations

 Y= 2x+3 Y= 5x – 3

1. (7,0) B. (7,2) C. (2,7) D. (0,2)

26. Which set of ordered pairs represent a function?

1. (2,8)(3,9)(2,10) B. (1,2)(3,4)(3,7) C. (8,1)(8,10)(9,3) D. (1,6)(3,8)(5,11)

27. Given f(x) = 7x + 4 , find f(-3)

1. 21 B. -17 C. 17 D. -25

28. Which of the following could be an element of domain?

1. Input B. Output C. Y values D. Hypotenuse

29. Use substitution to find the solution to the system of equations below.

 Y= 2x + 3 3x + 5y = 54

1. (3,9) B. (9,3) C. (-1,9) D. (3,6)

30. Which of the following could be an element of range?

1. Input B. Output C. X values D. Legs

USE THE WORD PROBLEM TO ANSWER QUESTIONS 31-35

Gilbert is looking for a cell phone and a quality service plan for an affordable price.

Verizon is offering an Unlimited Everything Plan for $50 per month if you buy the phone for $100.

T-Mobile is offering an Unlimited Everything Plan for $25 per month if you buy the phone for $200.

31. Which equations represent the cost per month including the price of the phone for

 Verizon and T-Mobile respectively, where “y” represents cost and “x” represents the

 number of months paid for?

1. Y= 100x + 50 , Y= 100x + 25 C. Y= 50x + 100 , Y=25x + 200
2. Y= 100x - 50 , Y= 200x - 25 D. Y= 50x - 100 , Y= 25x – 200

32. Based on Gilbert’s options, he is trying to figure out how many months it would

 take until the price would be the same for the two companies. How many months

 will it take for the cost of the phone and the monthly fee to be the same for both

 companies?

1. 5 B. 3 C. 2 D. 4

33. If Gilbert signed a One-year contract with Verizon, how much will he pay including

 the cost of the phone?

1. $700 B. $1250 C. $600 D. $1000

34. Which company should Gilbert use if he only needs the phone for 3 months?

 Include cost of the phone.

1. Either one. They cost the same. C. Verizon
2. T-Mobile D. Not enough information given

USE THE EQUATION ***y = -8x + 4*** to answer questions 35 – 37

35. What is the slope of the equation?

1. 8 B. -8 C. 2 D. 4

36. What is the y-intercept of the equation?

1. (0,8) B. (0,4) C. (4,0) D. (-8,4)

37. Which statement best describes the graph of the equation?

1. It has a negative slope C. It has a positive slope
2. It has no slope D. It passes through the origin

38. What is the slope of these ordered pairs (2,20) and (7,15) ?

1. 5 B. -1 C. 10 D. 7

39. Which equation is in slope-intercept form?

1. X + Y = 9 C. X = 8Y – 3

 B. 2Y = 3X + 1 D. Y = 2X + 1

40.  What is the equation for the line that is graphed to the left?

1. Y= -3/4x + 12 C. Y= 3/4x - 12
2. Y= 16x + 12 D. Y= -3/4x + 16