ALGEBRA 1 EOC WINTER REVIEW PACKET

Show Work for Full Credit

1. There are 60 students going on a field trip to the chocolate factory. The students are from three different classes. Mrs. Hooper's class has 24 students and Mr. Gomez's class has 18 students. Which of the equalities correctly describes the students and could be used to solve for how many students are from Mr. Anderson's class? (Let A = the number of students in Mr. Anderson's class.)

A. $A + 18 = 24$

B. $A + A + A = 60$

C. $60 - 18 = A - 24$

D. $24 + 18 + A = 60$

2. Student council is renting a tent for $350 for an upcoming student fair. Each student attending the fair will pay $0.50. All other attendees will pay $2.25 each. If 200 students attend the fair, which inequality can be used to determine the number of "other" attendees, a, needed to cover the cost of the tent?

A. $(0.50)(200) - 2.25a \geq 350.00$

B. $(0.50)(200) + 2.25a \geq 350.00$

C. $0.50a - (2.25)(200) \geq 350.00$

D. $0.50a + (2.25)(200) \geq 350.00$

3. Solve for x: $3(2x - 1) - 10 = 8 + 5x$

A. −7

B. −3

C. 19

D. 21

4. Solve for x: $4(x + 5) = 3(x - 2) - 2(x + 2)$

A. x = −1

B. x = −4

C. x = −6

D. x = −10

5. Solve: $3(x + 3) > 4(x - 4)$

A. $x > 25$

B. $x < 25$

C. $x > -7$

D. $x < -7$

6. Solve the following inequality for b, showing all of your work carefully and completely.

$4b - 12 - 5b < 9b + 8$

7. What is the value of x in the equation

$\frac{3}{4}x + 2 = \frac{5}{4}x - 6$?

A. -16 B. 16 C. -4 D. 4

8. The formula for simple interest plus starting principal, where A = amount, P = principal, r = interest rate per period, and t = time, is given below:

$A = P + Prt$

Which could be used to find the time, t, if the amount, principal, and interest are known?

A. $A - P - Pr = t$

B. $\frac{A-P}{Pr} = t$

C. $\frac{A-Pr}{P} = t$

D. $\frac{A}{P+rt} = t$

9. A line is represented by the equation $3x + 2y = 4$.

What is another way to represent the same line?

A. $y = -\frac{3}{2}x + 2$

B. $y = \frac{3}{2}x + 2$

C. $y = \frac{3}{2}x + 4$

D. $y = -\frac{3}{2}x + 4$

10. Eddie's Towing Company charges $40 to hook a vehicle to the truck and $1.70 for each mile the vehicle is towed. Which equation best represents the relationship between the number of miles towed, m, and the total charges, c?

A. $c = 40 + 1.70$

B. $c = 40 + 1.70m$

C. $c = 40m + 1.70$

D. $c = 40m + 1.70$

11. A construction company spends w weeks extending an existing road. The existing road is 5 miles long. Each week the company completes 0.2 miles of the extension. Which equation models the total length (L) of the road over time?

A. $L = 0.22w + 5$

B. $L = 0.22w - 5$

C. $w = 0.22L + 5$

D. $w = 0.22L - 5$

12. Justin plans to spend $20 on sports cards. Regular cards cost $3.50 per pack and foil cards cost $4.50 per pack. Which inequality shows the relationship between the number of packs of regular cards (r) and the number of packs of foil cards (f) Justin can afford to buy?

A. $3.5f + 4.5r \leq 20$

B. $3.5r + 4.5f \leq 20$

C. $3.5f + 4.5r \geq 20$

D. $3.5r + 4.5f \geq 20$

13. State the missing steps and reasons to this solution of $3(x + 4) = 18$.

a) $3(x + 4) = 18$

b) _____ _____

c) $3x + 12 - 12 = 18 - 12$

d) $3x + 0 = 18 - 12$

e) $3x = 18 - 12$

f) _____ _____

g) $\frac{3}{3}x = \frac{6}{3}$

h) $1x = \frac{6}{3}$

i) $x = \frac{6}{3}$

j) $x = 2$

For questions 13 and 14, use the solution to the equation $3(x - 9) = 12$ below.

Start: $3(x - 9) = 12$

Step 1: $3x - 27 = 12$

Step 2: $3x - 27 + 27 = 12 + 27$

Step 3: $3x = 39$

Step 4: $x = 13$

13. In Step 1, the multiplication property of equality was applied.

☐ True ☐ False

14. In Step 3, the addition property of equality was applied.

☐ True ☐ False

15. Dr. Math thinks he knows more than you about what is true and false world just because he's a doctor. He says that the equation $y = 17x + 1$ also includes the point (1, 8). Is Dr. Math right or wrong?
A. He's right

B. He's wrong

C. We need more information before we can say if he's right or wrong

D. None of the above

16. You talk on the phone y minutes on day x of every month according to the equation y = 2x + 1. The cell Phone company claims you talked 12 minutes on the phone on the fourth day of the month. Are they right?

A. Yes, you did talk on the phone for 12 minutes on the fourth of the month

B. No, you talked on the phone for 7 minutes on the fourth of the month

C. No, you talked on the phone for 9 minutes on the fourth of the month

D. No, you talked on the phone for 15 minutes on the fourth of the month

17. The director of a play must decide how much to charge per ticket. If tickets cost c dollars each, a total of (75-5c) people will attend the play. Which ticket price will generate the most income?

A. $1.00

B. $7.50

C. $15.00

D. $20.50

18. A satellite television company charges a one-time installation fee and a monthly service charge. The total cost is modeled by the function $y = 40 + 90x$. Which statement represents the meaning of each part of the function?

A. y is the total cost, x is the number of months of service, $90 is the installation fee, and $40 is the service charge per month.

B. y is the total cost, x is the number of months of service, $40 is the installation fee, and $90 is the service charge per month.

C. x is the total cost, y is the number of months of service, $40 is the installation fee, and $90 is the service charge per month.

D. x is the total cost, y is the number of months of service, $90 is the installation fee, and $40 is the service charge per month.

19. A car leaves Albany, NY, and travels west toward Buffalo, NY. The equation $D = 280 - 59t$ can be used to represent the distance, D, from Buffalo after t hours. In this equation, the 59 represents the

A. car's distance from Albany

B. speed of the car

C. distance between Buffalo and Albany

D. number of hours driving

20. What is the value of $f(16) - f(0)$ when $f(x) = 4x - 8$?

A. 16

B. 48

C. 56

D. 64

21. The number of miles a car can be driven depends on the number of gallons of gas in its tank. The function m = 25g models a situation in which a car gets 25 miles per gallon. If the gas tank holds 20 gallons of gas, which inequality represents its range?

A. $0 \leq g \leq 20$

B. $0 \leq m \leq 500$

C. $m \leq 500$

D. $g \leq 20$

22. Which equation could best be used to determine the value of $f(3)$ for the function $f(x) = 2x + 4$?

A. $f(3) = 23 + 4$

B. $f(3) = 2(3) + 4$

C. $f(3) = 3(2x) + 4$

D. $f(3) = 3(3x + 4)$

23. Let f be a function such that $f(x) = 2x - 4$ is defined on the domain $2 \leq x \leq 6$. The range of this function is

A. $-\infty \leq y \leq \infty$

B. $0 \leq y \leq 8$

C. $0 \leq y \leq \infty$

D. $2 \leq y \leq 6$

24. If the function $f(x)$ represents the number of hours that it takes a person to catch x fish in a lake. What domain makes sense for the function?

A. $-\infty \leq x \leq \infty$

B. $0 < x < \infty$

C. $x \leq 0$

D. $x \geq +\infty$

25. Given two equations of lines: $y = -\frac{1}{4}x + 2$ and $-2y = \frac{1}{2}x - 4$

How do the lines compare?

A. They are different lines with the same slope.

B. They are different lines with the same y-intercept.

C. They are the same line, both with a slope of 1/2 and a y- intercept of -4

D. They are the same line, both with a slope of - 1/4 and a y- intercept of 2.