NAME _____ DATE _____ PERIOD _____

Benchmark Test – Third Quarter

1. What is the slope of the line that passes through $M(-6, 1)$ and $N(2, 5)$?

A. 2

***B.** $\frac{1}{2}$

C. $-\frac{1}{2}$

D. -2

2. What is the result when the expression $(6x - 3)$ is subtracted from $(-3x + 2)$?

F. $9x - 5$

***G.** $-9x + 5$

H. $3x - 1$

J. $-3x + 1$

3. Which relation is *not* a function?

A.

x	−2	0	2	4	6
y	3	3	3	3	3

***B.**

x	−3	0	2	−3	1
y	−5	4	2	0	−1

C.

x	1	2	3	4	5
y	1	2	3	4	5

D.

x	−4	1	2	−3	4
y	0	3	−1	−2	3

4. SHORT ANSWER Carla and Mandy are solving the inequality below.

$$-4x \geq 12$$

Carla says the solution is $x \leq -3$, while Mandy says the solution is $x \geq -3$. Which student is correct? What mistake was made by the other student?

Carla; Sample answer: Mandy forgot to reverse the inequality symbol.

5. A moving company charges $40 plus $0.25 per mile to rent a van. Another moving company charges $25 plus $0.35 per mile to rent the same type of van. For what number of miles will the rental cost be the same for both companies?

***F.** 150 miles

G. 180 miles

H. 260 miles

J. 650 miles

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NAME _____ DATE _____ PERIOD _____

Benchmark Test – Third Quarter *(cont.)*

6. Which of the following expressions cannot be factored?

A. $15x - 10$

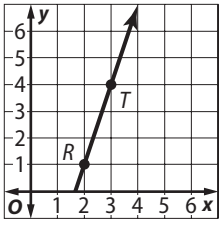
B. $4x + 8$

***C.** $3x + 8$

D. $2x - 2$

7. SHORT ANSWER What is the slope of the line that passes through points R and T?

3



8. What is the constant rate of change of the function represented in the table?

x	y
−5	23
−1	7
3	−9
7	−25

F. 16

G. 4

***H.** −4

J. −16

9. Which system of linear equations has a solution of $(-2, 1)$?

***A.** $2x + 3y = -1$
$x - y = -3$

B. $2x + 3y = 1$
$x - y = 3$

C. $2x + 3y = -1$
$x - y = 3$

D. $2x + 3y = 1$
$x - y = -3$

10. A tank contains 550 gallons of water. When the valve is opened, the tank drains at a rate of 12 gallons per minute. Which function shows the relationship between the time t the valve is opened and the amount of water in the tank?

***F.** $A(t) = -12t + 550$

G. $A(t) = 12t + 550$

H. $A(t) = 12 + 550t$

J. $A(t) = -12 + 550t$

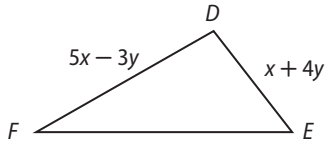
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NAME _____ DATE _____ PERIOD _____

Benchmark Test – Third Quarter *(cont.)*

11. **SHORT ANSWER** If $f(x) = -2x - 1$ and $g(x) = -x$ what is the value of $f[g(2)]$? **3**

12. The perimeter of ΔDEF is $12x + 3y$. What is the measure of the third side of the triangle?



***A.** $6x + 2y$

B. $6x + y$

C. $18x + 4y$

D. $18x + 10y$

13. What are the x- and y-intercepts of the linear equation below?

$$6x - 2y = 12$$

***F.** (2, 0) and (0, −6)

G. (0, 2) and (−6, 0)

H. (−6, 0) and (2, 0)

J. (0, 2) and (0, −6)

14. Which operation should be performed first to solve the inequality below?

$$-3x + 5 \leq 23$$

A. Add 5 to each side.

B. Divide each side by −3.

C. Reverse the inequality symbol.

***D.** Subtract 5 from each side.

15. **SHORT ANSWER** Predict what happens to the graph of $y = -2x - 8$ when the slope is changed to 2.

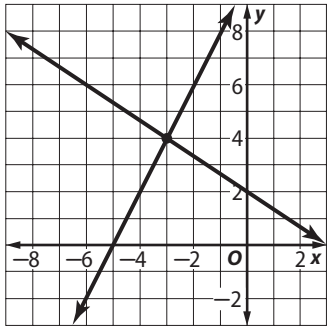
The *y*-intercept stays the same, but the graph changes from sloping downward from left to right to sloping upward.

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NAME _____ DATE _____ PERIOD _____

Benchmark Test – Third Quarter *(cont.)*

16. What is the solution to the system of linear equations shown below?



F. (4, −3)

G. (−4, 3)

***H.** (−3, 4)

J. (3, −4)

17. Which expression is equivalent to the algebraic expression below?

$$-4(3x - 5)$$

A. $-x - 1$

B. $-7x + 9$

***C.** $-12x + 20$

D. $-12x - 20$

18. Melissa Sue is trying to solve for n in the equation shown. If she solves the equation correctly, which of the following could be one step of her solution?

$$5(n + 6) = 2(n - 1)$$

F. $5n + 6 = 2n + 1$

G. $5n + 6 = 2n - 2$

H. $5n + 30 = 2n + 1$

***J.** $5n + 30 = 2n - 2$

19. SHORT ANSWER The total cost to play paint ball can be represented by the expression $(48x + 54)$ dollars. If Rocko and five friends split the cost equally, what is the cost for each person? Explain how you can use a model to show that your answer is correct.

8x + 9; See students' work.

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NAME _____ DATE _____ PERIOD _____

Benchmark Test – Third Quarter *(cont.)*

20. Tisa bought movie tickets for herself and two of her friends. She paid $8.50 for each ticket. If Tisa has $14.50 left, how much money did she have before she bought the movie tickets?

A. $23.00

B. $25.50

C. $31.50

***D.** $40.00

21. What is the solution to the equation below?

$$-\frac{2}{3}p + \frac{1}{6} = \frac{7}{10}$$

F. $p = -\frac{9}{4}$

G. $p = -\frac{13}{10}$

***H.** $p = -\frac{4}{5}$

J. $p = -\frac{16}{45}$

22. **SHORT ANSWER** A shipping company charges $3.50 plus $0.85 per pound to ship a package. Janet shipped a package and the total charge was $8.60. Write and solve an equation to find the number of pounds she was charged for the package.

6 pounds; $3.50 + 0.85n = 8.60$

23. Which number line shows the solution to the inequality below?

$$v - 2 > 1$$

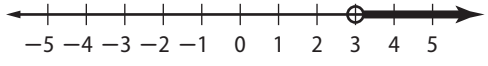
A.



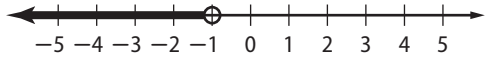
B.



***C.**



D.



24. Which linear expression would you add to $-8b + 5$ to have a sum of $-b$?

F. $b + 5$

G. $-b - 5$

H. $-7b + 5$

***J.** $7b - 5$

25. The maximum heights of the high jump bar that Marion cleared in five track meets are shown in the table.

Marion's High Jump Results	
Track Meet	**Height (in.)**
1	59.25
2	60.50
3	62.25
4	57.75
5	64.00

Write an inequality to represent the height she must clear at her next meet to have a mean height of at least 61 inches. Round your answer to the nearest hundredth.

$h \geq 62.25$ in.

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