Multiple Choice: Circle the letter of the correct answer. <u>Show all necessary work in the space provided.</u>

1. Which equation has a constant of proportionality equal to 4?

A. $4y = 4x$ B. $4y = 12x$

C. $3y = 4x$ D. $3y = 12x$

_____

2. A triangle has side lengths of $(4.1a + 6.2b)$ inches, $(4.3a + 8.3c)$ inches, and $(1.6c – 5.1b)$ inches. Which expression represents the perimeter, *in inches*, of the triangle?

A. $11.4ac + 9.4bc$ B. $8.4a + 1.1b + 9.9c$

C. $10.3ab + 12.6ac - 3.5bc$ D. $8.4a + 7.8b + 3.5c$

_____

3. Which expression is equivalent to $-\frac{2}{3}(2 – 6x + 12)$?

A. $4x – 9\frac{1}{3}$ B. $-4x – 9\frac{1}{3}$

C. $-4x + 9\frac{1}{3}$ D. $-5\frac{1}{3}x$

_____

4. The width of a rectangle is $6\frac{2}{3}$ inches. The length of the rectangle is twice its width. What is the perimeter of the rectangle?

A. 20 inches   B. 40 inches

C. $30\frac{2}{3}$ inches   D. $88\frac{8}{9}$ inches

5. For his cell phone plan, Heath pays $20 per month plus $0.05 per megabyte in data usage. He wants to keep his bill under $80 per month. Which inequality represents the number of megabytes, **m**, Heath can use for data each month while staying within his budget?

A. $m < 1{,}200$

B. $m < 1{,}600$

C. $m > 1{,}200$

D. $m > 1{,}600$

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6. The graph below shows the total distance, in miles, traveled by a towboat over time, in hours.

AVERAGE SPEED
OF TOWBOAT
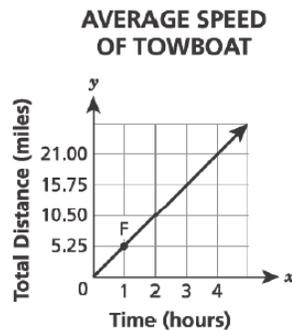
Which statement **best** describes the meaning of the coordinates of point F on the graph?

A. It shows the unit rate of the graph in hours per mile.

B. It shows the unit rate of the graph in miles per hour.

C. It shows the time, in hours, it takes the towboat to travel 1 mile.

D. It shows the distance traveled, in miles, by the towboat after 5.25 hours.

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7. Howard has a scale model of the Statue of Liberty.

- The model is 15 inches tall.

- The scale of the model to the actual statue is 1 inch : 6.2 meters.

Which equation can Howard use to determine, x, the height in meters, of the Statue of Liberty?

A. $15x = 6.2$

B. $6.2x = 15$

C. $\dfrac{1}{6.2} = \dfrac{x}{15}$

D. $\dfrac{1}{6.2} = \dfrac{15}{x}$

Extended Response: <u>Show all necessary work.</u>

8. Members of a baseball team raised $967.50 to go to a tournament. They rented a bus for $450.00 and budgeted $28.75 per player for meals. They intend to spend all the money they raised. Write and solve an <u>equation</u> that models this situation and could be used to determine the number of players, **p**, the team can bring to the tournament.

9. Determine the *smallest integer* value that makes the statement **5x − 4 > -3x + 24** true.

10. Write the complete <u>factored form</u> of **32m + 56mp**.