Additional PSSA Practice

Name:

7. Amanda graphed a linear function with the equation \( y = 1.4x \). Which statement about the slope of Amanda’s line is true?
   - A. The slope is a rational number that can be written as \( \frac{13}{9} \).
   - B. The slope is a rational number that can be written as \( \frac{14}{10} \).
   - C. The slope is an irrational number that can be written as \( \frac{13}{9} \).
   - D. The slope is an irrational number that can be written as \( \frac{14}{10} \).

   \[
   m = 1.4 \quad 13 \div 9 = 1.4444 \approx 1.4
   \]
   \[
   14 \div 10 = 1.4
   \]

12. Connie sells hamburgers at a food stand. The graph below shows the relationship between the weight (x), in pounds, of meat used and the price (y), in dollars, of a hamburger.

   The cost of meat per pound is the same for each hamburger Connie sells. What is the cost of meat per pound for each hamburger Connie sells?

   a. $0.95  
   b. $1.90  
   c. $2.00  
   d. $3.80
13. A school has collected student enrollment data since it opened. The graph below shows the number of students (y) in hundreds enrolled at the school each year (x) the school has been open.

![Student Enrollment Graph](image)

Which statement best describes the change in student enrollment shown in the graph?

a. Enrollment has increased by approximately 1.3 students per year.
b. Enrollment has increased by approximately 133 students per year.
c. Enrollment has increased by approximately 400 students per year.
d. Enrollment has increased by approximately 1,100 students per year.

17. Quinn needs to buy fabric for a border to sew onto all four edges of a tablecloth. He also needs an extra 0.875 feet of fabric to make a matching potholder. The length of the tablecloth is \( \frac{4}{3} \) of its width (w), in feet. The total amount of fabric needed (f), in feet, is represented by the equation below.

\[
f = 2w + \frac{4}{3}w + 0.875
\]

Quinn needs \( \frac{113}{8} \) feet of fabric for the border of the tablecloth and the potholder. What is the width of Quinn's tablecloth?

\[
\frac{113}{8} = 2w + \frac{4}{3}w + 0.875
\]

\[
14.125 = \frac{14}{3}w + 0.875
\]

\[
\frac{3}{14} \cdot 13.25 = \frac{14}{3}w \cdot \frac{13}{4}
\]

\[
2.84 = w
\]
14. The graph of a line is shown below.

To find the slope, Jackie makes right triangle $P$ by using the graph of the line as the hypotenuse of the triangle as shown in the figure. To check her work, she repeats the process and makes a right triangle $Q$ as shown. Which statement explains why the slope of the line should be the same when calculated with either triangle?

a. The two triangles are similar.

b. The two triangles are congruent

c. One triangle is a translation of the other triangle.

d. The lengths of the hypotenuse of each triangle are equal.

e. 

19. A store creates a mixture using only peanuts and almonds.

- There are 20 pounds of the mixture.
- Peanuts cost $2.95 per pound.
- Almonds cost $5.95 per pound.
- The mixture costs $4.00 per pound.

How many pounds of peanuts are in the mixture?

Let $p = \text{ weight of the peanuts}$

Let $a = \text{ weight of the almonds}$

$-2.95(p + a = 20)$

$2.95p + 5.95a = 80$

$-2.95p - 2.95a = -59$

$3a = 21$

$a = 7$
22. Sofia boarded a bus to school at the bus stop. The distance traveled by Sofia's bus is represented by the graph below.

\[ m = \frac{6}{10} = 0.6 \text{ miles/min} \]

\[ m = \frac{4.8 - 2.4}{9 - 7} = 1.2 \text{ mi/min} \]

At the same bus stop, Barry boarded a different bus to school 5 minutes after Sofia. The distance traveled by Barry's bus is described by the table below.

**Barry's Bus**

<table>
<thead>
<tr>
<th>Time (minutes)</th>
<th>Distance (miles)</th>
</tr>
</thead>
<tbody>
<tr>
<td>7</td>
<td>2.4</td>
</tr>
<tr>
<td>9</td>
<td>4.8</td>
</tr>
<tr>
<td>11</td>
<td>7.2</td>
</tr>
</tbody>
</table>

The school is located 12 miles from the bus stop. Which bus arrives at the school first, and what is the speed of that bus?

a. Sofia's bus arrives at the school first with a speed of 0.6 miles per minute.

b. Barry's bus arrives at the school first with a speed of 0.83 miles per minute.

c. Barry's bus arrives at the school first with a speed of 1.2 miles per minute.

d. Sofia's bus arrives at the school first with a speed of 1.67 miles per minute.

31. Ken built the picture frame shown below.

![Diagram of a picture frame with measurements: 29 inches and 21 inches]

Which statement can be used to determine whether \( \angle P \) is a right angle?

A. \( 20 + 21 > 29 \)

B. \( 20^2 + 21^2 > 29^2 \)

C. \( (20 + 21)^2 > 29^2 \)

D. \( 20^2 + 21^2 = 29^2 \)
25. Andrea walks 5 miles from the library to her home. She starts walking at an average rate of 2 miles per hour. After 1 hour, she stops walking for 0.25 hour. When she begins walking again, Andrea walks at an average rate of 3 miles per hour until she arrives home. Which graph represents Andrea’s distance (y), in miles, from her home as a function of the amount of time (x), in hours, since she left the library?

A. Andrea’s Distance from Home

B. Andrea’s Distance from Home

C. Andrea’s Distance from Home

D. Andrea’s Distance from Home

40. The table below shows the numbers of grade 7 and grade 8 students who chose cheese pizza or pepperoni pizza as their favorite.

<table>
<thead>
<tr>
<th>Favorite Pizza</th>
<th>Cheese Pizza</th>
<th>Pepperoni Pizza</th>
</tr>
</thead>
<tbody>
<tr>
<td>Grade 7 Students</td>
<td>171</td>
<td>254</td>
</tr>
<tr>
<td>Grade 8 Students</td>
<td>285</td>
<td>143</td>
</tr>
</tbody>
</table>

Which approximation is closest to the percent of the students who chose pepperoni pizza as their favorite?

a. 47%  
 b. 50%  
 c. 53%  
 d. 87%
26. The manager of a small chain of restaurants compared the sales at different restaurant locations. She drew a graph comparing the daily sales, in dollars, to the number of competing restaurants in the neighborhood.

Based on the graph, how much do the daily sales change with each additional competitor in the neighborhood?

- The daily sales increase by $100.
- The daily sales decrease by $100.
- The daily sales increase by $200.
- The daily sales decrease by $200.

27. At a market, assorted fruit costs $3 per pound for the first 10 pounds of fruit purchased. After the first 10 pounds, the fruit costs $2 per pound. Which graph represents the total cost (y) in dollars, of going to the market as a function of the weight of fruit (x), in pounds, purchased?
32. The lengths x and y are shown in the figure below.

\[ 5^2 + 4^2 = x^2 \]
\[ 41 = x^2 \]
\[ x = 6.4 \]

\[ 5^2 + 8^2 = y^2 \]
\[ 89 = y^2 \]
\[ y = 9.4 \]

Which number line shows the closest approximate values of x and y?

A. 

B. 

C. 

D. 

35. The scatter plot below shows how many points Denise scored in a game based on the number of hours she practiced.

Using a line of best fit, how many points should Denise expect to score after she practices for 3 hours?

a. 7  b. 10  c. 12  d. 16
36. The table below shows the average number of fish Jamal caught in an hour based on the water temperature, in degrees Fahrenheit (°F).

<table>
<thead>
<tr>
<th>Water Temperature (°F)</th>
<th>Fish Caught</th>
</tr>
</thead>
<tbody>
<tr>
<td>51</td>
<td>5</td>
</tr>
<tr>
<td>72</td>
<td>1</td>
</tr>
<tr>
<td>45</td>
<td>6</td>
</tr>
<tr>
<td>64</td>
<td>2</td>
</tr>
<tr>
<td>70</td>
<td>1</td>
</tr>
</tbody>
</table>

Based on a linear model of the information in the table, how many fish should Jamal expect to catch in an hour when the water temperature is 55°F?

a. 3  b. 4  c. 5  d. 6

37. The height (y) of the tallest building in Pittsburgh in year x is shown in the scatter plot below.

Based on the scatter plot, which statement is true?

a. The data show no correlation.

b. The data show a positive correlation.

c. The data show a negative correlation.

d. There are not enough data points to determine correlation.
39. The number of tickets sold for events at a theater last year varied with the cost per ticket, as shown in the scatter plot below.

Based on the equation of the line of best fit for the scatter plot, which statement about the relationship between cost per ticket and number of tickets sold is true?

a. The slope of the line of best fit is approximately -26.5, which means that for every $2 increase in cost per ticket, the number of tickets sold decreased by 26.5.

b. The slope of the line of best fit is approximately -26.5, which means that for every $1 increase in cost per ticket, the number of tickets sold decreased by 26.5.

c. The slope of the line of best fit is approximately 26.5, which means that for every $2 increase in cost per ticket, the number of tickets sold increased by 26.5.

d. The slope of the line of best fit is approximately 26.5, which means that for every $1 increase in cost per ticket, the number of tickets sold increased by 26.5.