1. Choose the expressions that make the equation true.

Mark all that apply.
$\frac{8}{15} \div \frac{4}{5}=$ $\qquad$
(A) $\frac{1}{3}$
(C) $\frac{20}{60}$
(B) $\frac{2}{3}$
(D) $\frac{40}{60}$
2. Select the expressions that are equivalent to 81. Mark all that apply.
(A) $3^{4}$
(C) $3^{3} \times 3$
(B) $9^{9}$
(D) $3 \times 3 \times 9$
3. Fernando donates $\$ 2$ to a local charity organization for every $\$ 15$ he earns. Cleo donates $\$ 4$ for every $\$ 17$ she earns. Is Fernando's ratio of money donated to money earned equivalent to Cleo's ratio of money donated to money earned? Explain.
$\qquad$
$\qquad$
4. Manny collected data on the number of quarters in 13 different wallets. Draw a box plot of the data and use it to find the interquartile range and range.

| Number of Quarters |  |  |  |  |  |  |  |  |  |  |  |  |
| :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- |
| 0 | 5 | 4 | 2 | 3 | 3 | 0 | 1 | 2 | 7 | 5 | 4 | 2 |



Interquartile range $\square$


GO ON
5. Four friends are buying healthy snacks at a concession stand. The costs of their snacks are $\$ 1, \$ 3$, $\$ 4$, and $\$ 4$. For numbers $5 \mathrm{a}-5 \mathrm{c}$, choose Yes or No to indicate whether the statement is correct.

5a. The mean cost for the snacks can be found by adding each cost and dividing that total by 4 .

5 b. The mean cost of the four snacks is $\$ 3$.

5c. The difference between the - Yes - No greatest cost and the mean is $\$ 2$.
6. The table shows the number of books each of three friends bought and the cost. On average, which friend spent the most per book? Use numbers and words to explain your answer.

| Friend | Number <br> of Books <br> Purchased | Total Cost <br> (in dollars) | Average <br> (in dollars) |
| :---: | :---: | :---: | :---: |
| Joyce | 1 | $\$ 10.95$ |  |
| Nabil | 2 | $\$ 40.50$ |  |
| Kenneth | 3 | $\$ 51.15$ |  |

7. For numbers 7a-7b, choose Yes or No to indicate whether the situation can be represented by a negative number.
7a. Ebony used a special camera to take

- Yes
- No photographs 500 feet below sea level.
7b. Elise deposited $\$ 100$ into her
- Yes
- No checking account.

8. Select the expressions that are equivalent to $7(p-4)$. Mark all that apply.
(A) $p-28$
(C) $7 p-28$
(B) $7 p-11$
(D) $p-11$
9. The prices of sweat shirts at five different stores are $\$ 6, \$ 12, \$ 11, \$ 15$, and $\$ 18$. The mean price is $\$ 12.40$ and the median price is $\$ 12$. Identify the outlier and describe how the mean and median for this data set are affected by it.
$\qquad$
$\qquad$
$\qquad$
10. Identify the quadrant where each point is located. Write each point in the correct box.

| $(-2,-4)$ | $(4,1)$ | $(-4,8)$ |
| :--- | :--- | :--- |
| $(9,-5)$ | $(3,-7)$ | $(-1,5)$ |


| Quadrant I | Quadrant II | Quadrant III | Quadrant IV |
| :--- | :--- | :--- | :--- |
|  |  |  |  |
|  |  |  |  |
|  |  |  |  |

11. Elena runs the same distance every day. In 3 days, she ran a total of 12 miles. How far will she run in 7 days? Show your work in the space below.

12. Select the pairs of points that have a distance of 4 units between them. Mark all that apply.
(A) $(3,-10)$ and $(3,-6)$
(C) $(-2,-1)$ and $(-2,-5)$
(B) $(1,1)$ and $(1,-3)$
(D) $(3,5)$ and $(3,-1)$
13. Circle $<,>$, or $=$.
13a. $\begin{aligned}-\frac{3}{4} \begin{array}{l}< \\ \\ \\ \end{array} \quad-1 .\end{aligned}$
13c. $-4 \begin{aligned} & < \\ & \\ & \\ & \\ & =\end{aligned}$
13b. $-5.5 \begin{aligned} & < \\ & > \\ & \\ & =\end{aligned}$
13d. $-8 \begin{aligned} & < \\ & > \\ & \\ & =\end{aligned}$
14. Match the inequality to the word sentence it represents.
$a<40 \bullet$ Tickets cost $\$ 40$ or less.
$b \leq 40$ - Owen collected fewer than 40 stickers.
$c>40$ - More than 40 students went on the trip.
15. Laura collected 12 more autographs than Lance. Let a represent the number of Lance's autographs. Identify the expression that can be used to find the number of autographs that Laura collected.
(A) 12a
(C) $12 a+2$
(B) $a-12$
(D) $a+12$
16. For numbers $16 a-16 b$, choose Yes or No to indicate whether the question is a statistical question.
16a. How many hours did it take AmyYes

- No to complete the marathon?
16b. How many hours did Amy spend
$\bigcirc$ Yes
- No training each night last week?

17. To reach her summer reading goal, Elisa has to read at least 30 books. An inequality $b \geq 30$ represents the number of books she needs to read. Which of the following are solutions to this inequality? Select all that apply.
(A) 28
(C) 30
(B) 29
(D) 31
18. The dot plot shows the average number of videos watched per month on a certain video-sharing website by randomly selected computer users. Select the statements that describe patterns in the data. Mark all that apply.


Average Videos Watched Per Month
(A) The mode is 61 .
(B) There is a gap from 59 to 60 , and from 64 to 66 .
(C) There is a cluster from 55 to 56 .
(D) There is a cluster from 62 to 68 .
19. Write the values in order from least to greatest.

$$
\left.\begin{array}{l|l|l|}
|-2| & |-6| & |-3|
\end{array} \right\rvert\,
$$

## GO ON

20. While playing a video game Ruth earned 5 base points, $b$, 9 bonus points, $x$, and 4 advanced points, $a$. Write an algebraic expression for the total number of points Ruth scored.
21. A teacher surveys her students to find out how much time the students spent studying for a science test on Saturday.

She uses \begin{tabular}{|c|c|c|c|c|}

\hline \multicolumn{2}{|c|}{| hours |
| :---: |
| minutes |
| seconds |} <br>

\hline

 as the unit of measure. 

\hline \multicolumn{4}{|c|}{ Saturday Study Time (min.) } <br>
\hline 45 \& 40 \& 30 \& 40 <br>
\hline 20 \& 30 \& 35 \& 35 <br>
\hline 40 \& 30 \& 50 \& 45 <br>
\hline
\end{tabular}


22. Use the net to find the total surface area of the solid figure it represents. Show your work.

23. A cube has side lengths that measure 6 units each.

Select the expressions that show the volume of the cube.
Mark all that apply.
(A) 2 (6 units $\times 6$ units)
(C) 216 cubic units
(B) $3 \times 6$ units
(D) 36 cubic units
24. For numbers 24a-24d, choose Yes or No to indicate whether the statement is correct.

24a. The $y$-coordinate of any point

- YesNo on the $x$-axis is 0 .

24b. Point $D(4,2)$ is to the left of the

- YesNo $y$-axis and above the $x$-axis.

24c. The coordinates of the origin are (0, 0).

24 d . If both the $x$ - and $y$-coordinates

- Yes
- No are positive, the point is to the right of the $y$-axis and above the $x$-axis.

25. A photo was cut in half at an angle. What is the area of one of the cut pieces?


The area is $\qquad$ $i n^{2}$.
26. The coordinates of three points are $A(2,3), B(11,7)$, and $C(8,3)$. Plot and label the points. Using a ruler, connect the points to form polygon $A B C$. Then explain how subtraction can be used to find the length of $A C$.


27. Richie collected the data shown.

242640273732

- Calculate the mean.
- Calculate the median.

28. Abraham has a toy box that is in the shape of a rectangular prism.

The volume is | $33 \frac{3}{4} \mathrm{ft}^{3}$. |
| ---: |
| $35 \frac{1}{2} \mathrm{ft}^{3}$. |
| $64 \frac{1}{2} \mathrm{ft}^{3}$. |


29. Andrew said | ${ }^{-6 \mid}$ does not equal |6|. Is Andrew correct? Draw a number line and use words to support your answer.
$\square$

## Trip to Mexico

Denine took a trip to Mexico. While she was there she had to use some of her math skills to understand distances and other units of measure and to exchange money.

1. In Mexico people use pesos for money. There are about 12.8 pesos in 1 dollar. About how much is 1 peso worth in dollars? Show your work, and give your answer to the nearest hundredth of a dollar and the nearest cent.
2. Denine sees a scarf for 70 pesos and wants to know if it is in her budget for souvenirs. Use ratio reasoning to find the approximate cost of the scarf in dollars, to the nearest half-dollar. (There will be a small error from rounding the value of the peso.)
3. Denine goes on a tour to see the Pyramid of the Sun and the Pyramid of the Moon, located about 48 kilometers from Mexico City. There are about 1.6 kilometers in 1 mile. About how many miles are the pyramids from Mexico City? Use ratio reasoning to find the answer.
4. Denine reads that the Pyramid of the Sun is more than

71 meters tall. One meter is about 3.3 feet. About how tall is the pyramid in feet?
5. When Denine gets home, she wants to make a model of the Pyramid of the Sun. The base of the real pyramid is about 224 meters wide on each side. If she makes her model 24 inches wide at the base, about how tall will the model be? Use ratio reasoning to find the answer.

GO ON

6. At a market Denine buys a bag of 6 mangoes for 15 pesos.

What is the unit price for 1 mango?
7. Denine sees a 1.5 -kilo block of cheese. If there are 2.2 pounds in 1 kilogram (kilo), what is the weight of the block of cheese in pounds?
8. One market sells a 3 -kilogram bag of tortillas for 42 pesos, and another sells 2 kilograms of tortillas for 26 pesos. Which unit price is lower?
9. Gasoline in Mexico is measured in liters. One gallon is equal to 3.785 liters. How many liters would it take to fill a 12-gallon tank?
10. Denine learns that about 3 out of 10 people in Mexico are under the age of 15 . What percent of the population is under the age of $15 ?$
11. If the population of Mexico is about 116 million, approximately how many children under the age of 15 are in the country?

