Taking the Practice Test

Actual Time Allowed on Test Day: 85 minutes

Number of Questions: 56

Format: Multiple Choice, Multiple Answer, and Numeric Entry

Calculator: When taking the actual test an online four-function calculator (i.e. add, subtract, multiply, divide) is available. For this practice test you are encouraged to use your own four-function calculator.
For any point \((x,y)\) on the graph, if \(y\) represents number of meters, then \(x\) could represent the equivalent number of

A. kilometers
B. decimeters
C. centimeters
D. inches
E. feet
Question 2

Which of the following function \( f \) is being displayed?

A. \( 3y = -9x + 12 \)
B. \( y = 4x - 3 \)
C. \( y = 9x - 12 \)
D. \( y = -4x + 3 \)
Imagine you are filling up your car with gas and the gas is coming out at a rate of 2.5 gallons per 45 seconds. At this rate, how much gas will be in your car after 2 minutes and 15 seconds?

A) 2 gallons

B) 7 gallons

C) 7.5 gallons

D) 10 gallons

E) 6.5 gallons
Using the image below, which of the following statements are true? Mark all that apply.

A) $a = 80^\circ$
B) $x = y$
C) $c = 100^\circ$
D) $b = c$
The following graph represents the amount of fish Ben has caught. If the relationship between time and fish caught remains constant, how many fish will Ben catch in 5 hours?

A) 6
B) 8
C) 10
D) 15
E) None of these
Which of the following are statistical questions?

A) What proportion of the students at your school like watermelons?

B) Do you like watermelons?

C) How many bricks are in this wall?

D) What was the temperature at noon today at City Hall?

E) None are stats question
The partially completed bar graph to the right shows the surface area of Australia’s climates, except for Urban. The total surface area of the four climates is approximately 7,692,000 million km squared. If the bar representing surface area, in millions of square kilometers, of urban climate is drawn it should end at approximately

A) 120,000 Thousand
B) 1.341 Million
C) 8.892 million
D) 3.609 million
E) 2.555 million
Write in the text box what is the correct way in writing the following expression:

One-half of nine more than two times a number n

A: 2(2n+9)

B: (2n-9)/2

C: (2n+9)/2

D: (9-2n)/2
Question 9

Wally has $2,200 budgeted for the month. According to his budget shown at the right, approximately how much will he spend on gas?

A) $726
B) $440
C) $367
D) $275
E) $550
Wally is fixing up his house and has a flooring project to complete. He wants to buy enough bamboo flooring to cover the floor space in rooms A and C, as well as hallway B. How many square feet does Wally need to buy?

Square Feet of Flooring: [Space for answer]
Yesterday, Jasmine bought a bag of pretzels to share with her friends. However, by the time she got home from the store she had eaten $\frac{1}{4}$ of the pretzels. As she was putting the groceries away, she ate $\frac{1}{2}$ of what was left. There are now 6 pretzels left in the bag. How many pretzels were in the bag to begin with?

A. 18  
B. 12  
C. 14  
D. 10  
E. 16
The scatterplot suggests a correlation between variables x and y. Which of the following best describes this correlation?

A. Positive correlation
B. Negative correlation
C. Decreasing correlation
D. There is no correlation.
Look at the pictograph, each box equals 3 boxes sold.
How many boxes were sold on Monday and Wednesday?

A) 20 boxes
B) 21 boxes
C) 7 boxes
D) 10 boxes
E) 18 boxes
Two of the lights at the local stadium are flickering. They both just flickered at the same time. One of the lights flickers every 7 seconds and the other light flickers every 8 seconds. How many seconds until both lights will flicker at the same time again?

A) 24 seconds
B) 48 seconds
C) 56 seconds
D) 112 seconds
The two cylinders below can hold the same amount of water. Find the value of $x$.

A) 6
B) 8
C) 10
D) 14
E) 16
Put the following numbers in order from smallest to largest:
\( \sqrt{25}, 4, \sqrt{17}, \sqrt{10}, 5.1, 12, 3 \)

A) \( \sqrt{10}, \sqrt{17}, \sqrt{25}, 3, 4, 5.1, 12 \)
B) \( 3, \sqrt{10}, 4, \sqrt{17}, \sqrt{25}, 5.1, 12 \)
C) \( 3, \sqrt{10}, \sqrt{17}, 4, \sqrt{25}, 5.1, 12 \)
D) \( 3, 4, 5.1, 12, \sqrt{17}, \sqrt{10}, \sqrt{25} \)
The scatterplot above suggests a trend between variables x and y. Which of the following best describes this trend?

A) As X increases, Y decreases  
B) Both X and Y remain constant  
C) No correlation  
D) As X increases, Y remains negative  
E) As X increases, Y increases
You decide to take a trip, you are flying from one time zone to another: right now where you are at which is City X it is currently 1:00 PM. You decide to take a flight that is 5 hours and when you land in City Y, at City B it is 2:00 PM. If it is noon in City X, what time is it in City Y?

Time: [ ]
Alfred is making Super Juice for the county fair that is made from apple, pineapple, pomegranate, and grape juice. It is made with the following parts:

1/2 apple juice
1/4 pineapple juice
1/8 pomegranate juice
1/8 grape juice

If Alfred uses 1 gallon of apple juice to make Super Juice, which of the following must also be true?

A) Alfred uses 1/4 gallon of pineapple juice.

B) Alfred uses 1/2 gallon of pomegranate juice.

C) Alfred uses 1 gallon of pineapple juice.

D) Alfred uses 1/4 gallon of grape juice.

E) Alfred uses 1/16 gallon of pomegranate juice.
The number of absences in Mrs. Klein's class for each of the first 3 months of the year were 16, 12, and 17, respectively. If the average (arithmetic mean) number of absences for the first 4 months of the year was 14, how many absences were there in the 4th month?

A.) 9
B.) 10
C.) 11
D.) 12
E.) 13
The cup was filled at a constant rate. It started empty. After 2 seconds, it held 70 cm$^3$ of water. What is the percent of the cup that is filled with water after 3 seconds?

(The Volume $V$ of a cone with base radius $r$ and height $h$ is $V = \frac{1}{3}\pi r^2 h$.)

A. 50%
B. 60%
C. 67%
D. 80%
E. 90%
Question 22

The circular region is divided into five sectors. Four of the sectors are labeled with the fraction of the area of the circular region they represent. What fraction of the area of the circular region is missing?

A. 1/4
B. 3/16
C. 1/6
D. 2/5
Carter went to a shopping mall and stopped at a store and bought Strawberry juice and Blueberry juice. The equation $2.4S + 2.25B$ represents the total cost of the juice and amount of juice with $S$ being strawberry and $B$ being blueberry. What part of the equations shows the total cost of the blueberry juices he bought?

A) $2.45S$
B) $2.45S + 2.25B$
C) $B$
D) $2.25B$
E) $S$
Using the bar graph below find out on average how many pizza slices did one person eat?

A) 2.8 slices
B) 3.5 slices
C) 2.5 slices
D) 3.75 slices
What is the midpoint of the coordinates (3,4) and (7,12)?

A) (10,16)
B) (7,8)
C) (5,8)
D) None of these
Question 26

What is the equation of this straight line in Slope-intercept Form?
A) $y = \frac{-4}{3}x + \frac{2}{3}$
B) $y = \frac{-4}{3}x + \frac{32}{3}$
C) $y = \frac{4}{3}x + \frac{2}{3}$
D) $y - 6 = \frac{-4}{3}(x - (-4))$
E) No correct answers
<table>
<thead>
<tr>
<th>Age</th>
<th>Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>11</td>
<td>3</td>
</tr>
<tr>
<td>12</td>
<td>5</td>
</tr>
<tr>
<td>13</td>
<td>1</td>
</tr>
<tr>
<td>14</td>
<td>10</td>
</tr>
<tr>
<td>15</td>
<td>3</td>
</tr>
</tbody>
</table>

The distribution of students age in Ms. Benscoter’s class of 22 students is shown in the table above. If one of the students is to be randomly selected from the ages 12 and 14-year olds, what is the probability that a 12 year old was selected?

A) 3/10  
B) 2/3  
C) 5/10  
D) 1/5  
E) 1/3
Question 28

You are making a design with the 3 primary colors. red, yellow, and blue. This design features 3 blue squares for every 2 yellow squares, and 5 red squares for every 6 blue squares. If this design has 4 yellow squares in it, how many red squares are in it?

Red Squares:  

Lucinda's hair is 4 centimeters long. Her hair grows 1.5 centimeters per month. Lucinda wants her hair to grow so that it is at least 7 centimeters long. In months, how long will it take for Lucinda's hair to grow to at least 7 centimeters long?

A) 1

B) 1.5

C) 3

D) 4

E) 2
The accompanying histogram shows the heights of the students in Kyra's health class.

What is the total number of students in the class?
Of the following fractions, which is the greatest?

A. 7/13  
B. 3/5  
C. 5/8  
D. 8/9  
E. 11/16
Which of the following would be a logical and correct first step in solving the equation above?

A. \( 1[4 -2(6 - 3)] \div 2 \)
B. \( 4 - 3[4 -2(3)] \div 2 \)
C. \( 4 - 3[-2] \div 2 \)
D. \( 4 - 3[4 -6 ] \div 2 \)
1/3 represents 3 actual miles on a map. What is the distance between 2 people that are 5 inches apart from each other?

A. 45 miles
B. 50 miles
C. 20 miles
D. 48.5 miles
E. 15 miles
ABC Travel Agency surveyed a random sample of 55 of their clients about their vacation plans. Of the clients surveyed, 13 expected that they would go on 3 vacations in the next year. There are 330 ABC Travel Agency clients total. About how many people would you suspect will go on 3 vacations next year?

A) 6 passengers
B) 25 passengers
C) 52 passengers
D) 78 passengers
The sum of three numbers is 14. The largest is 4 times the smallest, while the sum of the smallest and twice the largest is 18. Find the numbers.

Numbers = ___,____,____
The triangle is rotated about the origin by $120^\circ$ clockwise. Which one of the following shows the correct image?

A) A  
B) B  
C) C  
D) D  
E) None of above
A bag contains 100 solid colored eggs, of which 45 are yellow and the rest are either purple or green. If one egg is to be selected at random from the bag, the probability that the egg selected will be green is 1/5. How many purple eggs are in the bag?

A) 25  
B) 30  
C) 15  
D) 65  
E) 35
If you are given the expression $x^2 + 3y = 25$, what are the value(s) of $x$ if $y$ is equal to 3?

A: +3

B: 8

C: +3, -3

D: 16/3
The recipe for a single cake requires 5 eggs. Cartons of eggs are sold at the grocery only in packs of 12. Allyson needs to bake 10 cakes for Penelope's birthday bash. How many cartons of eggs will she need to buy in order to have enough eggs to bake all the cakes?

A) 1 carton
B) 2 cartons
C) 3 cartons
D) 4 cartons
E) 5 cartons
Clare recorded the amounts of time spent doing homework, in hours per week, by students in sixth, eighth, and tenth grades. She made a dot plot of the data for each grade and provided the following summary.

- Students in sixth grade tend to spend less time on homework than students in eighth and tenth grades.
- The homework times for the tenth-grade students are more alike to each other than the homework times for the eighth-grade students.

Use Clare's summary to match each dot plot to the correct grade (sixth, eighth, or tenth).
A certain animated movie earned $1.1 \times 10^9$ in revenues at the box office. The movie lasts $9.1 \times 10^1$ minutes.

Approximately how much revenue was earned per minute at the movie?

A. $1.27 \times 10^8$
B. $8.27 \times 10^7$
C. $8.27 \times 10^8$
D. $1.21 \times 10^7$
E. None of the Above
Carter has 37 coins, all nickels and dimes. The value in total is $3.10. How many dimes does Carter have?

A. 23
B. 24
C. 27
D. 25
A triangle has lengths of 32 and 14. Which of the following could be the length of the third side?

A) 17  
B) 22  
C) 50  
D) 104  
E) 5
A town's total limit for firefighter's wages and benefits in a new budget is $600,000. If wages are calculated at $40,000 per firefighter and benefits at $20,000 per firefighter. How many firefighters can be hired?

A) 15 firefighters
B) 20 firefighters
C) 36 firefighters
D) 10 firefighters
Which is the value of x?

A) 2
B) 4
C) 6
D) 8
E) 10
The population of a town was recorded every twenty years from 1900 to 2000. The results are shown in the line graph.

What was the population of the town in the year 1900?
There are 150 basketball and hockey players in a school. If there are more basketball players than hockey players, how many hockey players are in the school?

Chose all statements that are sufficient to answer

A) The ratio of basketball players to hockey players
B) Percent of basketball players compared to everyone in the school
C) Difference of varsity starters to JV starters
You owe a friend $4000 and your payment plan is $250 per month. Which of the following expressions represents what you owe your friend after $x$ months.

A: $250-4000x$

B: $250x-4000$

C: $4000x-250$

D: $4000-250x$
Last year, a computer cost $1,275. This year the same computer cost $1,025. Approximately, what is the percent of change for the cost of the computer from last year to this year?

A) 20% increase  
B) 20% decrease  
C) 24% increase  
D) 24% decrease  
E) 80% decrease
Mrs. Fields’ science class takes care of a plant at school. The class is responsible for watering the plant and measuring its growth. The students’ measurements are charted in the table.

<table>
<thead>
<tr>
<th>Number of Months (m)</th>
<th>Height of the Plant (h) in inches</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>8</td>
</tr>
<tr>
<td>2</td>
<td>13</td>
</tr>
<tr>
<td>3</td>
<td>18</td>
</tr>
<tr>
<td>4</td>
<td>23</td>
</tr>
</tbody>
</table>

Which of the following equations relates the height of the plant, \( h \), and the number of months, \( m \), assuming a constant rate of growth?

A. \( 5m + 3 = h \)
B. \( 4m = h \)
C. \( 8m - 5 = h \)
D. \( 3m + 5 = h \)
The Ming family has a backyard kiddie pool. The pool is 2 feet tall and the bottom of the pool has a diameter of 10 feet. The wall of the pool is 1-foot wide. After a lot of splashing one afternoon, the pool is only half full.

What is the volume of water remaining in the pool?

(The volume of a cylinder is $V=\pi r^2 h$.)

A. $16\pi$ feet cubed
B. $32\pi$ feet cubed
C. $25\pi$ feet cubed
D. $50\pi$ feet cubed
E. $8\pi$ feet cubed
Miss Larson took 10 math tests in one marking period. The scores were,

63, 89, 69, 73, 84, 91, 99, 87, 77, 94

What is the range of her test scores?

A. 84
B. 31
C. 36
D. 80
An oak tree is 9 meters tall and a bird is standing on the ground 12 meters from the tree. If the bird flies directly to the top of the tree, how far will it fly?

A) 12
B) 8
C) 5
D) 15
E) 22
The number of fish, \( f \), at a pet store is 4 more than 7 times the number of puppies, \( p \), at the pet store. Write the equation for the number of fish at the pet store.

A) \( f = (p+4) \times 7 \)

B) \( f = 7p + 4 \)

C) \( f = 4(p+7) \)

D) \( f = 4p + 7p \)
A python curls up to touch the tip of its own tail with its nose, forming the shape of a circle. The python is $2.6\pi$ meters long. What is the radius of the circle?

A) 1.1 m  
B) 1.3 m  
C) 2.2 m  
D) 2.6 m  
E) 3.0 m
Choose the which answer has the correct order, from smallest, to largest.

A) 1½, 6/1, 2¼, 2½, 6/3, 14/2
B) 1½, 6/3, 2¼, 2½, 6/1, 14/2
C) 1½, 6/3, 2½, 2¼, 6/1, 14/2
D) 1½, 2¼, 6/3, 2½, 6/1, 14/2
E) No correct answers