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
Question 1

For any point \((x, y)\) on the graph, if \(y\) represents number of inches, then \(x\) could represent the equivalent number of feet. What would the numbers from bottom to top on the y-axis be?

A. 6, 12, 18, 24, 30
B. 2, 4, 6, 8, 10
C. 10, 20, 30, 40, 50
D. 12, 24, 36, 48, 60
E. 24, 48, 72, 96, 120
Question 2

Graph $f(x) = 2x - 1$. Which of the following graphs is correct?
Imagine you are drinking out of a big bottle of soda. You are drinking the soda at a rate of .25 liters per 25 seconds. How much will you drink after 2 minutes and 30 seconds?

A) 2 liters  
B) 1.75 liters  
C) 1.5 liters  
D) 3 liters  
E) .75 liters
Using the image below, angles 1 and 4 are:

A) Supplementary
B) Complimentary
C) Vertical Angles
D) Corresponding Angles
Question 5

If this graph remains constant, what will \( y \) equal when \( x = 3 \)?

A) 9.0  
B) 10.5  
C) 11.0  
D) 11.5  
E) None of these
A city council member wanted to know how her constituents felt about a planned rezoning. She randomly selected 757575 names from the city phone directory and conducted a phone survey. Identify the population and sample in this setting.

A) The population is everyone listed in the city phone directory; the sample is the 757575 people selected.

B) The population is residents of the city; the sample is the registered voters in the city.

C) The population is registered voters in the city; the sample is everyone listed in the city phone directory.

D) Both A and B

E) No answer is correct
The partially completed bar graph shows the surface area of a family's property. The total surface area of the property is 45,000 square feet. If the bar representing the surface area, in square feet, of the deck is drawn, it should end at approximately.

A) 10,000
B) 12,000
C) 2,000
D) 3,000
E) 25,000
In the following written expression solve for the value of the unknown number:

seven equals one half of 5 more than three times a number.

A: \((11/2)\)
B: \((19/3)\)
C: \((17/3)\)
D: 3
If rent is 35% of Selina's $4,400 budget, how much does Selina spend on rent?

A) $1,540
B) $2,860
C) $12,571
D) $154
E) $125.71
A farmer has 300 yards of fence to use to create a rectangular enclosure. What should the dimensions of the fenced enclosure be to maximize area?

Length: 

Width: 
Luther bought a bag of parsnips that weighed 2 1/2 pounds. He also bought a bag of turnips that weighed 4 1/2 times as much as the parsnips. How many pounds of turnips did Luther buy?

Write your answer as a fraction or as a whole or mixed number.

[ ] pounds
The scatterplot below suggests a trend between variables x and y. Which of the following best describes this trend?

A. As x increases, y decreases.
B. As x increases, y remains negative.
C. As x increases, y increases.
D. As x increases, y remains the same.
E. There is no trend.
Look at the pictograph, how many students get to school in a car, bus, or on foot?

A) 32  
B) 112  
C) 24  
D) 136  
E) 144
Kyle is planning a Superbowl party at his house. He went to the store to buy paper plates, napkins, and cups. Paper plates are sold in packages of 12. Cups are sold in packages of 8, and napkins are sold in packages of 16. If Kyle wants the same amount of each item, how many packages of cups does he need to buy?

A) 6 packages

B) 2 packages

C) 8 packages

D) 10 packages
If the volume of the sphere below is roughly 2144.66, what is the diameter (d)?

A) d = 3
B) d = 8
C) d = 10
D) d = 16
E) d = 21
Which is the best approximation of the square root of 51?
A) 7.1
B) 7.2
C) 7.5
D) 7.9
E) 25.1
The scatterplot above suggests a trend between variable X and Y. Which of the following best describes this trend?

A) As X increases, Y decreases  
B) No correlation  
C) As X increases, Y increases linearly  
D) As X increases, Y increases exponentially  
E) As X increases, Y decreases exponentially
You decide to take a road trip; you and a few friends are traveling to another time zone: right now where you are at it is 5 PM. You begin a 5-hour drive and when you reach your destination it is 5 PM. What time is it at home where you left if it is currently 8 PM at your destination?

A: 1 PM
B: 12 PM
C: 1 AM
D: 12 AM
The relationship between $n$ and $m$ is expressed by the equation $5n + 4m + 12 = 0$. If $n$ is decreased by 4, which of the following statements about $m$ must be true?

A) It increases by 5.

B) It increases by 4.

C) It decreases by $\frac{5}{4}$.

D) It decreases by 5.

E) It decreases by $\frac{4}{5}$. 
There are three different basketball teams, and each has played five games. You have each team's score from each of its games.

<table>
<thead>
<tr>
<th></th>
<th>Game 1</th>
<th>Game 2</th>
<th>Game 3</th>
<th>Game 4</th>
<th>Game 5</th>
</tr>
</thead>
<tbody>
<tr>
<td>Jaguars</td>
<td>67</td>
<td>87</td>
<td>54</td>
<td>99</td>
<td>78</td>
</tr>
<tr>
<td>Wolves</td>
<td>85</td>
<td>90</td>
<td>44</td>
<td>80</td>
<td>46</td>
</tr>
<tr>
<td>Lions</td>
<td>32</td>
<td>101</td>
<td>65</td>
<td>88</td>
<td>55</td>
</tr>
</tbody>
</table>

Suppose you want to join one of the three basketball teams. You want to join the one that is doing the best so far. If you rank each team by their mean scores, which team would have the highest mean score?

A.) Jaguars    B.) Wolves    C.) Lions
What is the ratio of the volume of Cylinder A to the volume of Cylinder B?

(The volume $V$ of a cylinder with radius $r$ and height $h$ is $V = \pi r^2 h$)

A. $18/25$
B. $5/6$
C. $6/5$
D. $25/18$
E. $5/18$
The circular region is divided into six sectors. Five of the sectors are labeled with the decimal of the area of the circular region they represent. What decimal of the area of the circular region is missing?

A. .13  
B. .14  
C. .11  
D. .132
1/5 represents 2 actual miles on a map. What is the distance between 2 people that are 8 inches apart from each other?

A. 55 miles
B. 70 miles
C. 25 miles
D. 90 miles
E. 80 miles
On average, a student spends 2.5 hours in the library per week. This week there was a total of 300 hours spent in the library by students. Given the average and the total amount of time spent in the library, estimate how many students spent time in the library this week.

A) 12 students

B) 75 students

C) 750 students

D) 120 students
On the number line, what values is exactly halfway between -4 and 3/2?

A) 5/2
B) -5/2
C) 5/4
D) -5/4
E) None of these
The General form of the equation of a straight line is $5x - 9y + 55 = 0$ and it passes through the point (-2, 5).

Using this point, what is the point - slope form of the equation?

A) $Y + 5 = -\frac{5}{9}(X-2)$
B) $Y + 5 = \frac{5}{9}(X-2)$
C) $Y - 5 = -\frac{5}{9}(x+2)$
D) $Y - 5 = \frac{5}{9}( x+2)$
E) No correct answers
The distribution of students age in an afterschool program of 75 students is shown in the table above. If one of the student is randomly selected from the ages 7-9, what is the probability that a 9-year-old was selected?

A) 17/75  
B) 17/50  
C) 50/75  
D) 2/3  
E) 11/45
you and your friend are playing a trading card game. There are 3 animals; a dragon, a whale, and a chameleon. 3 of these whale cards are worth a chameleon card, and for every 5 chameleons are 3 dragon cards. If you want to have 6 dragon cards, how many whale cards do you need to make that trade?
Which graph best represents the solution to the inequality $8x - 7 \geq 4x + 9$?

A) 

B) 

C) 

D)
The USA Track and Field Committee published the following report illustrating the comparison of lap speed and finishing placement of several top relay teams.

Based on the bar graph above, which of the following conclusions is *most* accurate?

A) The first-place team was twice as fast as the fourth-place team.
B) The fastest time for the 200-meter relay is 7 meters per second.
C) The first-place and second-place teams were closest in time to one another.
D) Every runner on the first-place team ran faster than the runners on the second-place team.
Which of the following fractions is least?

A. 3/7
B. 2/3
C. 15/26
D. 12/29
E. 4/9
Which of the following would be a logical and correct first and second step in solving the equation above?

A. $16 - 3(5)^2 ÷ 5$

B. $16 - 3(25) ÷ 5$

C. $16 - 75 ÷ 5$

D. $16 - 3(8^2 - 3^2) ÷ 5$
1/5 represents 2 actual miles on a map. What is the distance between 2 people that are 8 inches apart from each other?

A. 55 miles
B. 70 miles
C. 25 miles
D. 90 miles
E. 80 miles
The Chicago Bears and playing the Denver Broncos in a football games one weekend. Luca wants to know which team football fans in the U.S. think will win the game. Which of the following samples is the least likely to be representative of the population?

(A) Fifty randomly selected fans in New York

(B) Fifty randomly selected fans in Houston

(C) Fifty randomly selected fans in Philadelphia

(D) Fifty randomly selected fans in Chicago
Suppose you want to make a certain kind of tropical punch, using bananas, oranges, and papayas. You don't know how many of each to put in the punch, but you know that there are seven pieces of fruit in the mix, and there are twice as many oranges as bananas. You also know that the seven pieces of fruit cost $5.25, where bananas cost $.50 each, oranges cost $.75 each, and papayas cost $1.25 each.

Bananas = ____
Oranges = ____
Papayas = ____
Question 36

When this rectangle is rotated about the point (2,0) by 30° anticlockwise (counterclockwise), which one of these would it look like?

A) A
B) B
C) C
D) D
E) None of above
A bag contains 169 solid colored hearts, of which 56 are red and the rest are either purple or pink. If one heart is selected at random from the bag, the probability that the heart selected will be purple is $\frac{5}{13}$. How many pink hearts are in the bag?

A) 22
B) 121
C) 45
D) 48
E) 88
In the following expression $2x+3y+5x=20$ what is the value of $x$ when $y$ is equal to 2?
Tamika is baking cookies for her mother's birthday party. Her recipe makes 12 cookies. However, Tamika wants to make at least 108 cookies for the party. The recipe calls for the following:

1/2 cup butter
1/3 cup sugar
1 egg
1 1/4 cup flour
1 1/5 cup chocolate chips

If Tamika wants to make at least 108 cookies, all of the following statements about the recipe will be true EXCEPT:

A) Tamika will use 9 eggs.
B) Tamika will use 11 cups of flour.
C) Tamika will use 10.8 cups of chocolate chips.
D) Tamika will use 3 cups of sugar.
E) Tamika will use 4.5 cups of butter
Question 40

Match histograms A through E to dot plots 1 through 5 so that each match represents the same data set.

A:  
B:  
C:  
D:  

A:  
B:  
C: 
D:  

1:  
2:  
3:  
4:  

A:  
B:  
C: 
D:  
If a one-dollar bill is 0.0001 meters thick, how many meters tall would a stack of 4 trillion one-dollar bills be?

For reference:
1 trillion = $10^{12}$

A. $4 \times 10^{12}$
B. $4 \times 10^{16}$
C. $4 \times 10^{8}$
D. $1 \times 10^{12}$
E. $1 \times 10^{16}$
The attendance at a school concert was 578. Admission was $2.00 for adults and $1.50 for children. The total receipts were $985.00. How many adults and how many children attended?

A. 236 adult, 342 children
B. 424 adults, 154 children
C. 300 adults, 295 children
D. 450 adults, 128 children
A triangle has length of 12 and 18. Which of the following could be the length of the third side?

A. 4  
B. 3  
C. 40  
D. 25  
E. 50
Katie went to the store and bought cookies. Sugar cookies came in packs of 12, while chocolate chip came in packs of 16. If Katie got a total of 224 cookies and bought the same number of packs of sugar cookies and chocolate chip cookies. How many of each pack did she buy?

A) 4 each
B) 32 each
C) 8 each
D) 7 each
Which is the value of $x$?

A) 2  
B) 4  
C) 6  
D) 8  
E) 10
The line graph shows how the population of parrots on an island declined over the ten year period from 2001 to 2010. Measurements were taken at the beginning of each year. What was the total decline in the parrot population over that time?
Question 47

There are 25 students in Mr. Murphy’s class. If there are more girl than boy students, how many boys are in the class?

Choose all statements that are sufficient to answer

A) The ratio of girls to boys
B) The percent of students eat school lunch
C) The difference between the number of moms that teach and moms that don’t
It is your first semester of college and you take out a $5000 loan and in order to pay the loan off by the end of the semester you have a monthly payment of $1250. Write an expression that represents the money you still owe for the semester after x months.
Bradyn wants to find the percent of change of his hourly wage. Last year, Bradyn made $12 an hour. This year he is going to make $14 an hour. Which expression best represents the percent of change?

A) \( \left( \frac{14-12}{12} \right) \times 100 \)

B) \( \left( \frac{12-14}{14} \right) \times 100 \)

C) \( \left( \frac{12-14}{12} \right) \times 100 \)

D) \( \left( \frac{14-12}{14} \right) \times 100 \)

E) \( \left( \frac{12+14}{14} \right) \times 100 \)
The following table shows several pairs of $x$ and $y$ values. Which equation represents the relationship shown in the table?

<table>
<thead>
<tr>
<th>$x$</th>
<th>$y$</th>
</tr>
</thead>
<tbody>
<tr>
<td>2</td>
<td>6</td>
</tr>
<tr>
<td>4</td>
<td>18</td>
</tr>
<tr>
<td>6</td>
<td>38</td>
</tr>
<tr>
<td>8</td>
<td>66</td>
</tr>
<tr>
<td>10</td>
<td>102</td>
</tr>
</tbody>
</table>

a. $y = x + 4$.

b. $y = x^2 + 2$

c. $y = 2x + 2$

d. $y = 3x$

e. $y = 10x + 2$
A graduated cylinder is filled with $36\pi$ cm cubed of liquid. The liquid is poured into a different cylinder that has a radius of 3 cm.

What will the height of the liquid in the new cylinder?

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

A. 13 cm  
B. 9 cm  
C. 4 cm  
D. 3 cm  
E. None of the above
A marathon race was completed by 5 participants. What is the range of times given in hours below?
2.7 hr, 8.3 hr, 3.5 hr, 5.1 hr, 4.9 hr

A. 5.6 hr
B. 2.2 hr
C. 3.07 hr
D. 4.9 hrs
Three people are sitting on a bus. Paul is seated 4 meters directly behind Dakota and 3 meters directly left of Abby. How far is Dakota from Abby?

A) 5 meters
B) 6 meters
C) 10 meters
D) 2 meters
E) 12 meters
Kallene started with $20 this week. She works at a gas station that pays her $8.50 per hour. She works \( x \) amount of hours this week and has \( y \) amount of money at the end of the week. Write an expression in terms of how many \( x \) hours will she have to work to have a certain \( y \) amount of money.

A) \( x = 8.50y + 20 \)

B) \( x = 8.50(y-20) \)

C) \( x = (y-20)/8.50 \)

D) \( x = 20 + (y/8.50) \)
A baker uses a cookie cutter with a diameter of 8cm to cut out circular cookies from a big sheet of cookie dough. What is the approximate circumference (c) of each cookie?

A) 25.13 cm  
B) 27.34 cm  
C) 35.32 cm  
D) 50.26 cm  
E) 201.06 cm
Raul bought 66 tangerines and ate $\frac{2}{3}$ of them.
Omar bought 88 tangerines and ate $\frac{1}{4}$ of them.
James bought 25 tangerines and ate $\frac{1}{2}$ of them.

Who ate more tangerines?

A) Raul
B) Omar
C) James
D) They ate the same number of tangerines.
E) Not enough data to decide