"M-ath"letes

Challenge

2011

Championship Round

Test 2

TEAM NAME:

1. **Marcus spent $3.25 to wash his car. If one quarter operates the car wash for 60 seconds, how long did it take him to wash his car?**

A 10 minutes

B 13 minutes

C 16 minutes

D 32.5 minutes

CSM11180

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2. **A car gets 24 miles per gallon of gasoline (mi/gal). How many gallons of gasoline would the car need to travel 144 miles?**

A 6.5 gallons

B 6 gallons

C 5.5 gallons

D 5 gallons

CSM02086

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3. **Sheila has been given 5 minutes to solve 20 arithmetic problems. What is the minimum rate Sheila can work in order to finish in time?**

A 1 problem per minute

B 2 problems per minute

C 4 problems per minute

D 5 problems per minute

CSM20756

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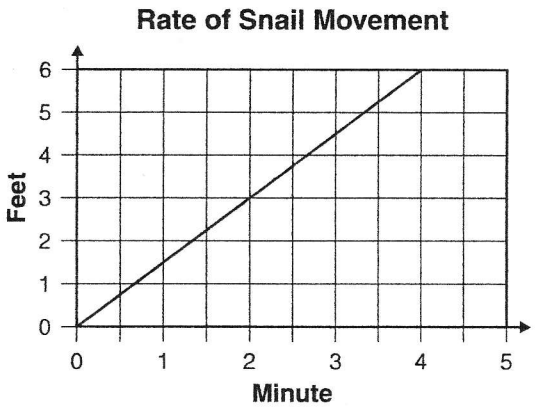
4. **A snail is trying to get to the other side of a park. At what rate is the snail traveling?**



A $\frac{1}{2}$ foot per minute

B 1 foot per minute

C $1\frac{1}{2}$ feet per minute

D 2 feet per minute

CSM21361

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5. **Jerry read a 200-page book in 10 hours. At that rate, how long will it take him to read a 320-page book?**

A 16 hours

B 18 hours

C 24 hours

D 32 hours

6.

The table shows how many T-shirts of each color Paul has in his closet.

Color	Number of Shirts
Green	3
Red	4
White	5
Blue	8
Total	20

If Paul chooses a T-shirt without looking, what is the probability that it will be blue?

A 4%

B 8%

C 40%

D 60%

CSN00191

7.

Mason has 10 black, 12 white, and 3 brown pairs of socks in one drawer. What is the probability that, without looking, Mason will pick a brown pair of socks from the drawer?

A 4%

B 12%

C 14%

D $33\frac{1}{3}\%$

8.

In her pocket, Kira has 2 red marbles, 2 green marbles, and 2 blue marbles that are all the same size. If Kira picks one marble out of her pocket without looking, what is the probability that it will be either red or green?

A $\frac{1}{6}$

B $\frac{1}{3}$

C $\frac{1}{2}$

D $\frac{2}{3}$

CSN00272

9. **If a freight train travels at a speed of 20 miles per hour for 6 hours, how far will it travel?**

A 120 miles

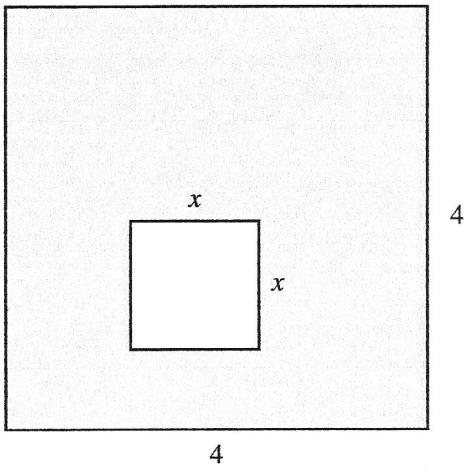
B 80 miles

C 26 miles

D 12 miles

CSM01834

10. **A square with a side of x is inside a square with a side of 4, as pictured below. Which expression represents the area of the shaded region in terms of x?**



A $16 + x^2$

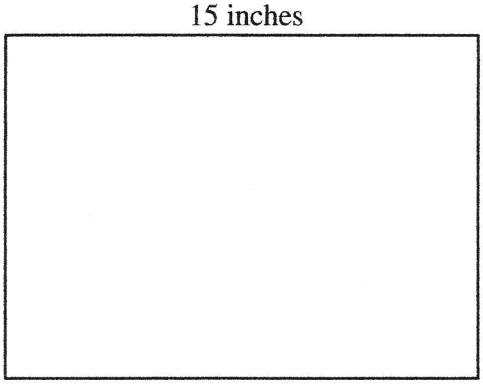
B $16 - x^2$

C $16 - 2x$

D $16 - 4x$

CSM02302

11. **The rectangle shown below has length 15 inches and perimeter P inches.**



Which equation could be used to find the width of the rectangle?

A $P = 15 + \frac{w}{2}$

B $P = 15 - w$

C $P = 30 + 2w$

D $P = 30 - 2w$

CSM00286

Wendy wants to take a survey to determine which flavor of ice cream is the most popular at her school. Which of the following methods is the *best* way for her to choose a random sample of the students at her school?

A selecting ten students from each homeroom

B selecting members of the girls' softball team

C selecting members of the boys' basketball team

D selecting students who like her favorite flavor of ice cream

CSM20726

13.

Celia has a large container in which four different kinds of coins are thoroughly mixed. She wants to take a sample of her coins to estimate which kind of coin she has the most. Which of the following methods is the *best* way for her to select a sample?

A taking one coin from the container

B taking coins until she has one of every kind

C taking ten coins of each type from the container

D taking thirty coins out of the container without looking

CSM20725

14.

Emil wants to find out the most popular football team at a game between the home team and the visiting team. Which of the following methods will give him the *most* accurate results?

A surveying the cheerleaders for the home team

B surveying people wearing hats for the visiting team

C surveying a group of people standing in line for tickets

D surveying people who do not live in the home team's city

15.

The table shows the annual profit for five companies.

2003 Profits

Company	Profit
I	$300,000
II	$275,000
III	$250,000
IV	$325,000
V	$300,000

Which statement is valid about the annual profits of these five companies?

A Companies II and V made the same profit.

B No company made less than $275,000 profit.

C No company made more than $300,000 profit.

D Company IV made $75,000 more profit than Company III.

CSM20772

16.

What is the supplement of a 40° angle?

A 50°

B 130°

C 140°

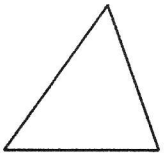
D 220°

CSM20689

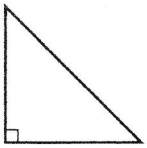
17.

Which figure is an acute triangle?

A



C



B

D

CSM10357

18.

Abe found the mean and median of this list of numbers.

1, 3, 3

If the number 6 were added to the list, then

A the mean would increase.

B the mean would decrease.

C the median would increase.

D the median would decrease.

19.

A snack bar sells 5 items with a mean (average) price of $0.60, as shown below.

Snack Menu	
Chips	$0.50
Juice	$0.80
Apple	$0.60
Candy	$0.70
Gum	$0.40

Which pair of items could be added to the menu without changing the average price?

A Banana ($0.60) and Soda ($0.75)

B Banana ($0.60) and Cookie ($0.50)

C Energy Bar ($0.45) and Cookie ($0.50)

D Energy Bar ($0.45) and Soda ($0.75)

CSN00031

20.

Marguerite earned a score between 75 and 89 on all of her previous spelling tests. She earned a score of 100 on her next test. Which of the following statements is true?

A The mode will increase.

B The mean will increase.

C The mean will decrease.

D The median will decrease.

CSM30199

Mathletes Challenge Championship Round Test 2

Test: 3/17/2011