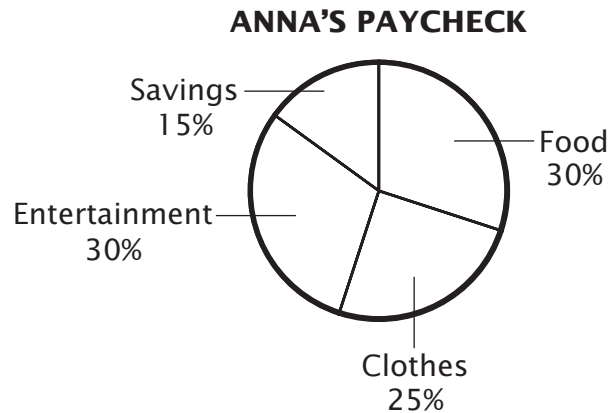# Missouri Assessment Program
Spring 2006

Mathematics

Released Items

Grade 7

1 The circle graph below shows how Anna spends the paycheck from her part-time job.

ANNA'S PAYCHECK

Savings 15%
Food 30%
Entertainment 30%
Clothes 25%

Anna receives a paycheck of $525 a month from her job. According to the information in the circle graph, approximately how much money does Anna spend on food in one month?

○ $130

○ $160

○ $200

○ $260

2 Rudy recorded the weight of his new puppy on the day it was born and once a week for its first year. Which of these would be the *most* appropriate way for Rudy to display the data?

○ stem-and-leaf plot

○ line graph

○ circle graph

○ box-and-whisker plot

3 Look at the pattern below.

$$8, 15, 29, 57, \ . \ . \ .$$

Which rule represents this pattern?

○ Add 7 to the previous number.

○ Add 14 to the previous number.

○ Multiply the previous number by 2 and add 1.

○ Multiply the previous number by 2 and subtract 1.

4 Which of these three-dimensional figures has 8 vertices?

○ triangular prism

○ rectangular prism

○ triangular pyramid

○ rectangular pyramid

5 The table below shows the scores of 9 students on a history test.

HISTORY TEST SCORES

26	39	18	46	30	46	35	50	48

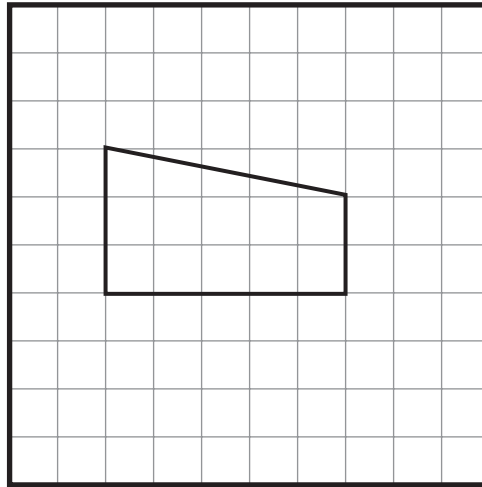What is the range for this set of data?

○ 22

○ 32

○ 39

○ 46

6 Mandy bought packs of trading cards that contain 8 cards each. She gave away 5 cards.

x = number of packs of trading cards

Which expression shows the number of cards that Mandy has left?

○ $8x - 5$

○ $5x - 8$

○ $5 - 8x$

○ $8 - 5x$

7 Look at the quadrilateral on the grid below.

What is the name of this type of quadrilateral?

_____

On the lines below, explain the properties that make this figure the type of quadrilateral named on the line.

_____

_____

_____

Go On ▶

8 Justin made the table below to record the average amount of time it took him to run one mile around a track each month.

JUSTIN'S TIME AROUND THE TRACK

Month	Time
September	10 minutes and 43 seconds
October	10 minutes and 12 seconds
November	8 minutes and 39 seconds
December	7 minutes and 21 seconds
January	6 minutes and 51 seconds

How much longer did it take Justin to run around the track in September than it took in January?

◯ 3 minutes and 34 seconds   ◯ 4 minutes and 8 seconds

◯ 3 minutes and 52 seconds   ◯ 4 minutes and 52 seconds
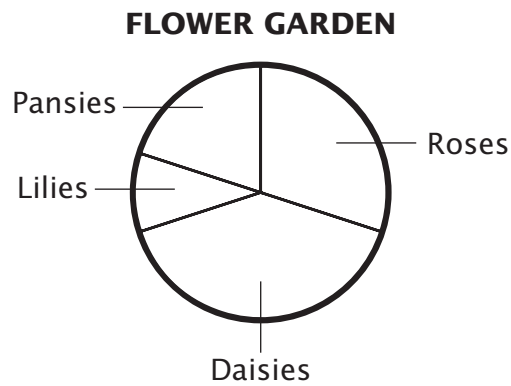
9 The data below shows the number of hours that 13 students volunteered at a hospital.

12   32   5   32   42   28   27   32   25   12   25   18   22

What is the median number of hours that the students volunteered?
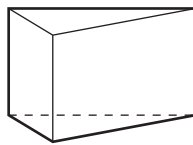
◯ 24 hours

◯ 25 hours

◯ 27 hours

◯ 32 hours

10 The circle graph below shows the types of flowers Callie planted in her garden.

FLOWER GARDEN

Callie planted a total of 50 flowers in her garden. According to the information in the circle graph, what is the best estimate for the number of daisies in her garden?

○   5

○   10

○   20

○   25

11 Study the figure below.

What is the name of this figure?

○   triangular pyramid

○   rectangular pyramid

○   triangular prism

○   rectangular prism

12 The battery for Kyle's cell phone lasts *at least* twice as long as the battery for his brother's cell phone. His brother's battery lasted 8 hours. Which of these inequalities is another way to express this relationship?

K = number of hours the battery lasts in Kyle's cell phone

- ○ $K < 2 \cdot 8$
- ○ $K \geq 2 \cdot 8$
- ○ $2K > 8$
- ○ $2K \leq 8$

13 Darrel drew the circle below.

← 3.5 in. →
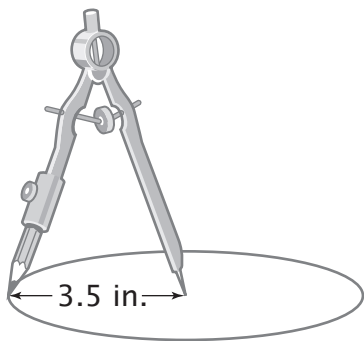
Circumference = $2\pi r$ $\pi \approx 3.14$

What is the approximate circumference of the circle Darrel drew?

- ○ 11 inches
- ○ 22 inches
- ○ 24.5 inches
- ○ 38.5 inches

14 Use your protractor to help you solve this problem.

The table below shows the number of students who prefer 3 different pizza toppings.

FAVORITE PIZZA TOPPINGS

Toppings	Number of Students
Sausage	20
Mushrooms	50
Pepperoni	30

Create a circle graph that represents the information from the table. Be sure to give your graph a title, and label each section with the correct pizza topping.

_____
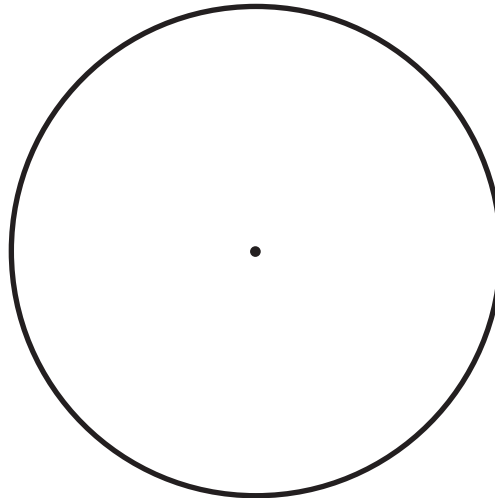
15 Laura paid a one-time membership fee of $48 to join a health club and $32 each month to continue her membership. Which equation can be used to determine the total cost (*t*) of Laura's membership after *x* months?

○ $t = 48 + 32x$

○ $t = (48 + 32)x$

○ $t = 48x + 32$

○ $t = 48 + 32 + x$

16 Which of these expressions is equivalent to $3(x + 4)$?

○ $3x + 4$

○ $3x + 12$

○ $4(x + 3)$

○ $4x + 12$

17 Gavin has more than twice as much money as Lester. Lester has $5. Which of these is another way to express this relationship?

| $G =$ amount of money that Gavin has |

○ $2G < 5$

○ $2G < 2(5)$

○ $G > 2(5)$

○ $G < 2(5)$

18 Carla drove an average of 55 miles per hour for 3 hours and then 35 miles per hour for 1 hour. Jason drove an average of 65 miles per hour for 3 hours and then 30 miles per hour for 1 hour. Which statement correctly compares the distances that Carla and Jason drove?

○ Jason drove 5 miles farther than Carla.

○ Carla drove 25 miles farther than Jason.

○ Jason drove 25 miles farther than Carla.

○ Carla drove 45 miles farther than Jason.

19 Use your protractor to help you solve this problem.

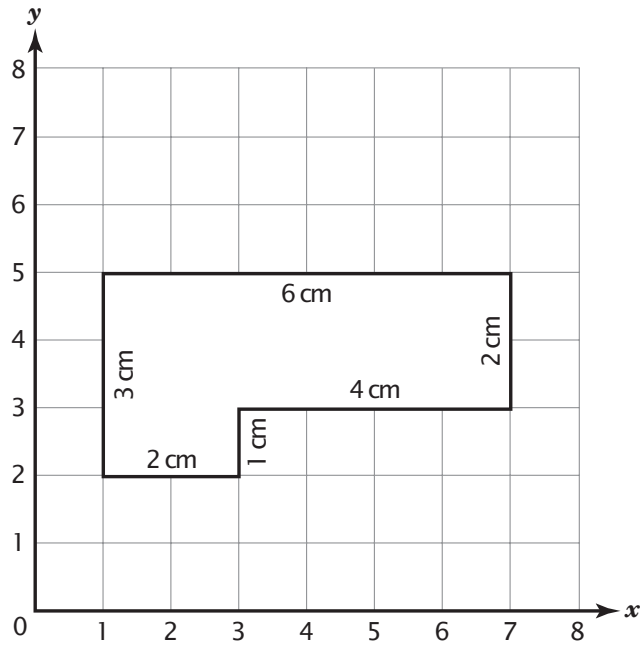All of the interior angles in the figure below have the same angle measure.
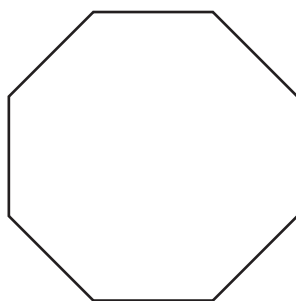
What is the measure of each interior angle?

○ 45°

○ 68°

○ 135°

○ 145°

20 Look at the figure on the grid below.

What is the perimeter of the figure after it is dilated (magnified) by a scale factor of 3?

○   6 centimeters   ○   36 centimeters

○   21 centimeters   ○   54 centimeters

21 At Sally's Pizza, the diameter of a medium round pizza is 10 inches and the diameter of a large round pizza is 14 inches. How much larger is the area of the large pizza than the area of the medium pizza? In the box below, provide the work that shows how you arrived at your answer and write your answer on the line.

Area of circle $= \pi r^2$
$\pi \approx 3.14$

_____ square inches

24 The tiles below are all placed into a bag. Robert reaches into the bag without looking and picks one tile.

A M D P S R B G
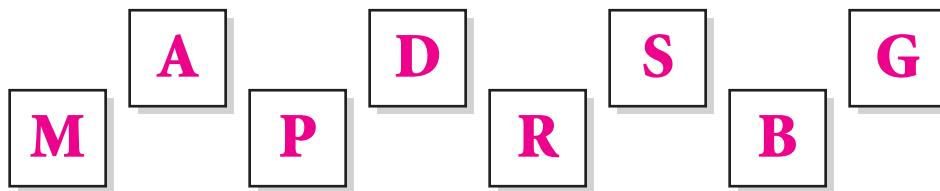
What is the probability that ROBERT will pick a tile with a letter in his name?

○ $\frac{1}{8}$

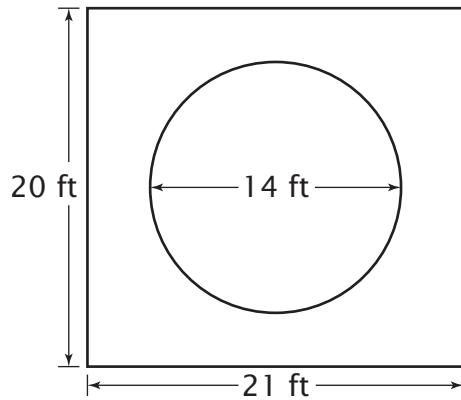○ $\frac{1}{4}$

○ $\frac{2}{6}$

○ $\frac{3}{5}$

25 The diagram below shows a circular rug placed on the floor in Jack's room.

20 ft

14 ft

21 ft

Area of rectangle = $l \cdot w$
Area of circle = πr^2
$\pi \approx 3.14$

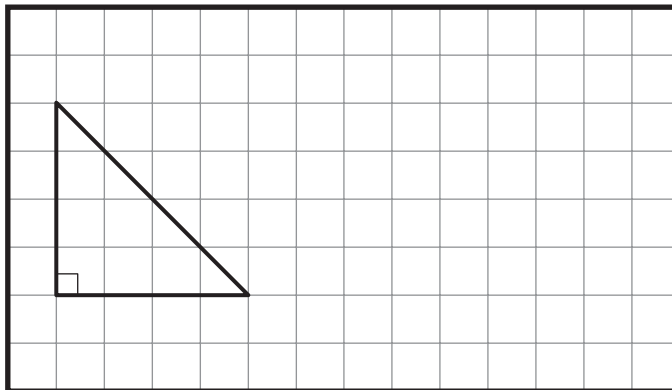Approximately how many square feet of the floor are *not* covered by the rug?

○   112 square feet

○   224 square feet

○   266 square feet

○   420 square feet

27 A right triangle is shown below. Draw the reflection (flip) of the triangle over the given line and indicate the right angle of the reflected triangle.
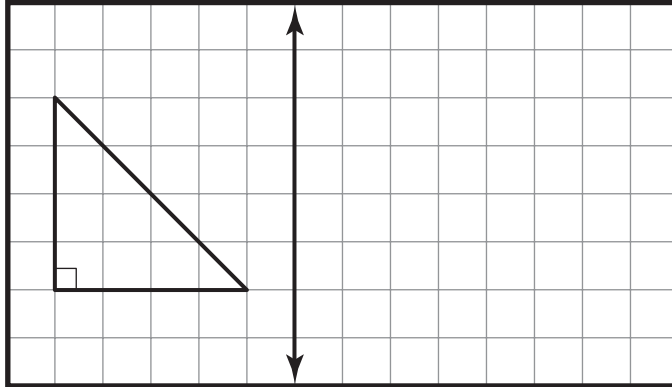
Draw the translation (slide) of the triangle 6 units to the right and indicate the right angle of the translated triangle.

KEY
⊢—⊣ = 1 unit

STOP ⬡

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