

6th Grade Individual Test 2007

1. A bus travels 250 miles on 10 gallons of gas. How many gallons will it need to travel 375 miles?  
[A] 13 gallons      [B] 6.7 gallons      [C] 15 gallons      [D] 14 gallons

2. Describe the graph below.

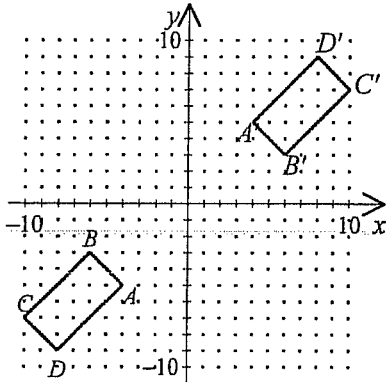


Figure  $A'B'C'D'$  is the image of figure  $ABCD$  under a rotation \_\_\_\_\_

- [A]  $90^\circ$  counterclockwise about the origin.      [B]  $270^\circ$  about the origin.  
[C]  $180^\circ$  about the origin.      [D]  $90^\circ$  clockwise about the origin.
3. A field is 350 m by 500 m. A barn 28 m by 38 m is built in the field. How much area is left over?  
[A]  $174,934 \text{ m}^2$       [B]  $173,949 \text{ m}^2$       [C]  $173,936 \text{ m}^2$       [D]  $176,064 \text{ m}^2$
4. Write  $\frac{22}{40}$  as a decimal and as a percent.  
[A] 0.55, 5.5%      [B] 5.5, 55%      [C] 0.55; 55%      [D] 0.55, 0.55%
5. Evaluate  $(x+3)^2 - 4$  when  $x = 5$ .      [A] 64      [B] 30      [C] 60      [D] 16
6. 10 of 50 students missed school because of the flu. What percent of the students missed school?  
[A] 10%      [B] 20%      [C] 5%      [D] 250%

7. Use the list of items for purchase at a snack shop.

- 6-pack juice box \$2.17
- mixed nuts \$1.89
- sub sandwich \$4.25
- apple chips \$0.83

About how much would it cost to buy one of each item at the snack shop?

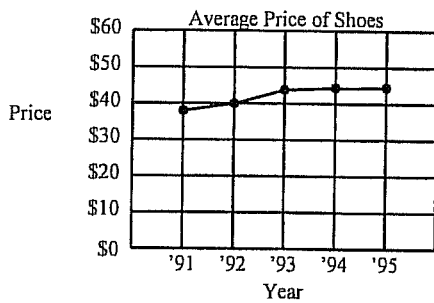
- [A] About \$12.00    [B] About \$6.00    [C] About \$9.00    [D] About \$4.00

8. The chances of the Rams defeating the Dolphins next week are 3 out of 4. What are the chances that the Dolphins will beat the Rams? (Write your answer as a percent.)

- [A] 33%                      [B] 25%                      [C] 75%                      [D] 57%

9. Find the median of the set of numbers.                      [A] 21    [B] 29    [C] 17.1    [D] 22.4  
4, 33, 27, 5, 24, 10, 21, 5, 25

10. Find the chart that best matches the line graph below.



[A]

Year	1991	1992	1993	1994	1995
Price	\$28.00	\$35.00	\$33.80	\$34.40	\$39.50

[B]

Year	1991	1992	1993	1994	1995
Price	\$44.50	\$44.40	\$43.80	\$40.00	\$38.00

[C]

Year	1991	1992	1993	1994	1995
Price	\$38.00	\$40.00	\$43.80	\$44.40	\$44.50

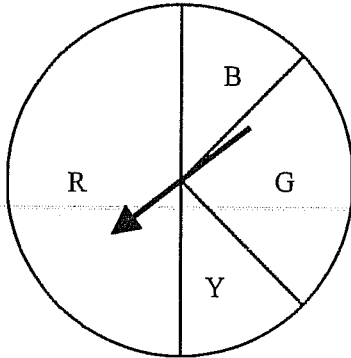
[D]

Year	1991	1992	1993	1994	1995
Price	\$39.50	\$34.40	\$33.80	\$35.00	\$28.00

11. Use the following information. A survey of 20 zoo visitors named their favorite exhibit. Two-fifths chose lions and tigers, three-tenths chose monkeys, one-fourth chose bears and the rest were undecided. How many of those surveyed chose lions and tigers as their favorite exhibit?

[A] 2                      [B] 5                      [C] 10                      [D] 8

12. If you spin the spinner, what is the probability of the pointer landing on G?



[A]  $\frac{1}{4}$                       [B]  $\frac{1}{8}$                       [C] 1                      [D]  $\frac{1}{2}$

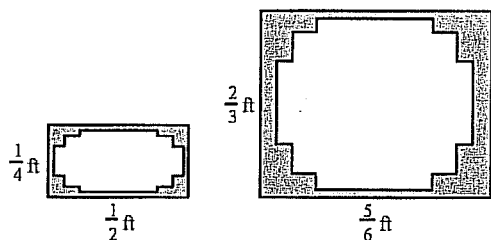
13. Use the following information. For a chopped fruit salad, Cheryl used  $4\frac{1}{2}$  pounds of apples,  $\frac{1}{2}$  pound of dates,  $\frac{3}{4}$  pound of raisins, and  $\frac{2}{3}$  pound of nuts. How many pounds of fruit salad did Cheryl make in all?

[A]  $5\frac{5}{6}$  pounds                      [B]  $6\frac{1}{12}$  pounds                      [C]  $6\frac{5}{12}$  pounds                      [D] 6 pounds

14. Evaluate the product when  $m = 4$ .  $\frac{3}{8}$  of  $m$

[A]  $\frac{3}{32}$                       [B]  $\frac{12}{32}$                       [C]  $4\frac{3}{8}$                       [D]  $1\frac{1}{2}$

15. Use the figures below.



How much longer is the larger frame than the smaller frame?

- [A]  $\frac{1}{2}$  ft longer      [B]  $\frac{3}{8}$  ft longer      [C]  $\frac{1}{4}$  ft longer      [D]  $\frac{1}{3}$  ft longer

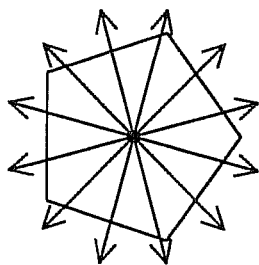
16. Multiply:  $4\frac{1}{2} \times 3\frac{2}{3}$       [A]  $6\frac{3}{5}$       [B]  $16\frac{1}{2}$       [C]  $5\frac{1}{3}$       [D] 4

17. The top walking deck of a sail boat is  $18\frac{4}{5}$  feet long. This is only  $\frac{13}{20}$  of the length of the boat. How long is the boat?

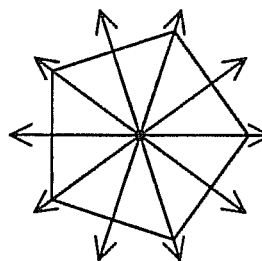
- [A]  $28\frac{12}{13}$  ft      [B]  $29\frac{3}{13}$  ft      [C]  $27\frac{12}{13}$  ft      [D]  $29\frac{2}{13}$  ft

18. Which figure shows all lines of symmetry?

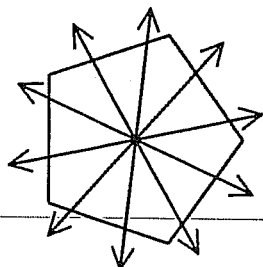
[A]



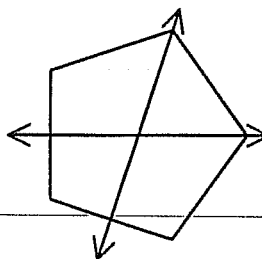
[B]



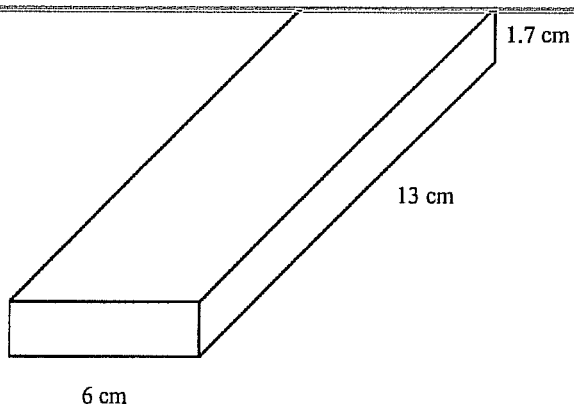
[C]



[D]



19. Find the surface area:



- [A]  $100.1 \text{ cm}^2$       [B]  $82.8 \text{ cm}^2$       [C]  $132.6 \text{ cm}^2$       [D]  $220.6 \text{ cm}^2$

20. Which number is divisible by 3 and by 4?

- [A] 228      [B] 681      [C] 916      [D] 687

21. Write the prime factorization of 504.

- [A]  $2^2 \cdot 3^3 \cdot 7$       [B]  $2^3 \cdot 3^2 \cdot 9$       [C]  $2^3 \cdot 3^2 \cdot 7$       [D]  $2^2 \cdot 3^3 \cdot 9$

22. A photo lab technician has a display ad that is 9 centimeters by 18 centimeters. The ad needs to be enlarged so the longer side is 24 centimeters. How long will the shorter side be after the enlargement?

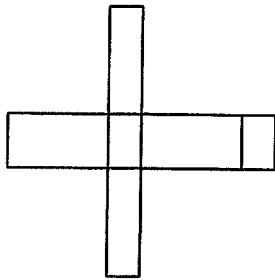
- [A] 48 cm      [B] 33 cm      [C] 12 cm      [D] 15 cm

23. If Mighty Mart sells 4 gumballs for 56 cents, how many gumballs could you buy for \$2.80?

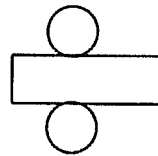
- [A] 23      [B] 70      [C] 224      [D] 20

24. Which net can be folded to form a cube?

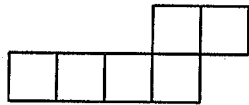
[A]



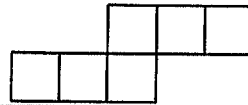
[B]



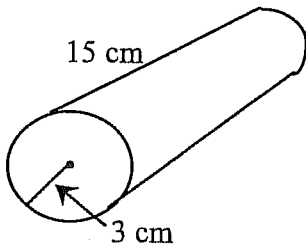
[C]



[D]



25. Find the surface area of the cylinder. Use 3.14 for  $\pi$ .



[A]  $339.12 \text{ cm}^2$

[B]  $424.05 \text{ cm}^2$

[C]  $45 \text{ cm}^2$

[D]  $282.6 \text{ cm}^2$

26. To make a box for her cat to climb on, Maria wants to cover a wooden cube with carpeting on 5 of its faces. If the cube has an edge of  $1\frac{1}{2}$  feet, how much area will Maria have to cover?

[A]  $8\frac{7}{16} \text{ ft}^2$

[B]  $3\frac{3}{4} \text{ ft}^2$

[C]  $5\frac{5}{8} \text{ ft}^2$

[D]  $11\frac{1}{4} \text{ ft}^2$

27. A rectangular fish tank has a base that is 11 inches by 5 inches. How much water will it take to fill the tank to a depth of 10 inches?

[A] 26 cu in.

[B] 430 cu in.

[C] 581 cu in.

[D] 550 cu in.

28. The GCF of 60, 160, and 260 is

[A] 6

[B] 20

[C] 5

[D] 60

29. How many 2-digit whole numbers are multiples of both 6 and 9?  
[A] 4 [B] 3 [C] 5 [D] 2
30. A \$5 roll of dimes has \_\_\_\_\_ more coins than a \$10 roll of quarters?  
[A] 0 [B] 5 [C] 2 [D] 10
31. On a map of Texas, one inch represents 25 miles. If Dallas and San Antonio are 6.4 inches apart, how many miles apart are they?  
[A] 256 [B] 390.6 [C] 1600 [D] 160
32. James wants to pour a patio that is 18 feet by 20 feet. He wants the concrete to be 6 inches deep. How many cubic feet of concrete mix are needed for the patio?  
[A] 180 cubic feet [B] 360 cubic feet [C] 90 cubic feet [D] 2160 cubic feet
33. You have a bag of 10 marbles. Three of them are red, 5 are blue, and 2 are green. What is the probability of picking a green or blue marble out of the bag randomly?  
[A] 0 [B]  $\frac{7}{10}$  [C]  $\frac{1}{10}$  [D]  $\frac{1}{2}$
34. Cone A has a radius of 2 inches and a height of 3 inches. In cone B, the height the same, but the radius doubled. Calculate the volume of both cones. Which statement is accurate?  
[A] When the radius is doubled, the resulting volume is 4 times that of the original cone.  
[B] When the radius is doubled, the resulting volume is 3 times that of the original cone.  
[C] When the radius is doubled, the resulting volume is half that of the original cone.  
[D] When the radius is doubled, the resulting volume is twice that of the original cone.
35. The largest possible circle is to be cut from a 12-foot square board. What would be the approximate area, in square feet, of the remaining board (unshaded region)?  
[A] 31 [B] 108 [C] 144 [D] 471
36. Tammy works in the frame shop. She measured a canvas to be framed and found it to be 1001 mm long. How many meters is that?  
[A] 1001 meters [B] 1.001 meters [C] 1.01 meters [D] 1.1 meters
37. Solve:  $6x + 7 = 61$  [A] 68 [B] 8 [C] 9 [D] 10

38. A number cube is tossed. Find the probability of obtaining a number greater than 2.

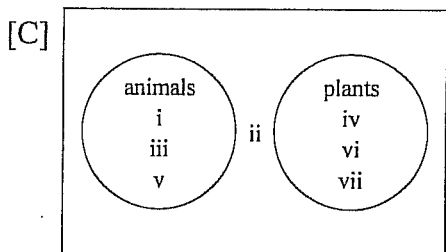
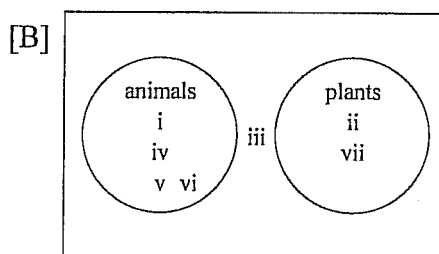
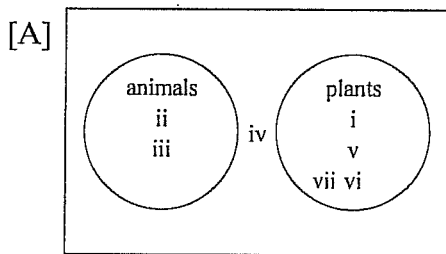
- [A]  $\frac{1}{6}$                       [B]  $\frac{2}{3}$                       [C]  $\frac{5}{6}$                       [D] 1

39. After the introduction of a new snack food, a taste test is conducted to see how it is being received. Of those who participated, 64 said they preferred the new snack food, 88 said they preferred the old snack food, and 48 could not tell any difference. What is the probability that a person in this survey preferred the new snack food?

- [A]  $\frac{8}{25}$                       [B]  $\frac{8}{11}$                       [C]  $\frac{8}{19}$                       [D]  $\frac{8}{17}$

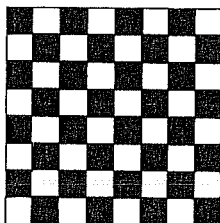
40. Sort the set of terms as animals, plants, or neither by placing the corresponding top-row numbers in a Venn diagram.

i	ii	iii	iv	v	vi	vii
dog	weed	rock	cat	horse	cow	tree



[D] none of these

41. The checkerboard below has \_\_\_\_\_.



- [A] line symmetry only                      [B] no symmetry  
 [C] rotational symmetry only                      [D] both line symmetry and rotational symmetry

42. Divide.  $3\frac{5}{6} \div 2\frac{1}{4}$  [A]  $\frac{27}{46}$  [B]  $1\frac{19}{27}$  [C] 5 [D]  $1\frac{17}{27}$
43. Michael's softball team won about 71% of the 34 games they played. How many games did they win?  
[A] 24 games [B] 26 games [C] 22 games [D] 10 games
44. In Betty's class there are 16 girls and 14 boys. Which of these is the correct ratio of girls to the total number of students in the class?  
[A] 7 to 15 [B] 7 to 8 [C] 8 to 15 [D] 8 to 7
45. Mrs. Smith's 6th grade class is going on a field trip. There are 29 children in the class. Parents are driving, and there will be 4 students per car. What is the smallest number of cars they will need for the children?  
[A] 9 [B] 6 [C] 8 [D] 7
46. Solve  $3x + 2(x + 6) = 12$  [A] 1 [B] -5 [C] 0 [D] 5
47. The literature club is printing a storybook to raise money. The print shop charges \$3 for each book, and \$45 to create the film. How many books can the club print if their budget is \$600?  
[A] 190 [B] 195 [C] 200 [D] 185
48. Use an equation to model the sentence.  
How many raisins are left in a jar of 99 raisins after you have eaten some?  
[A]  $R = \frac{99}{N}$  [B]  $R = \frac{N}{99}$  [C]  $R = 99 + N$  [D]  $R = 99 - N$
49. Express the phrase as a variable expression. Maria is nine years older than her sister. The sum of their ages is 11.  
[A]  $x + (x + 9) = 11$  [B]  $x = 11 + (x + 9)$   
[C]  $x - (x + 9) = 11$  [D]  $(x + 9) - x = 11$
50. If the corresponding sides of two triangles are proportional, then \_\_\_\_\_.  
[A] the triangles are congruent [B] the triangles are similar  
~~[C] corresponding side lengths are equal~~ ~~[D] the triangles are right triangles~~

Southeast Bulloch High School Fifth & Sixth Grade Mathematics Tournament  
April 14, 2007  
Sixth Grade Division Item Analysis

Number	Answer	Percent Correct
1.	C	92%
2.	C	76%
3.	C	91%
4.	C	92%
5.	C	93%
6.	B	96%
7.	C	98%
8.	B	87%
9.	A	91%
10.	C	99%
11.	D	93%
12.	A	97%
13.	C	97%
14.	D	92%
15.	D	95%
16.	B	98%
17.	A	65%
18.	B	91%
19.	D	69%
20.	A	98%
21.	C	94%
22.	C	73%
23.	D	94%
24.	D	81%
25.	A	71%
26.	D	73%
27.	D	93%
28.	B	96%
29.	C	66%
30.	D	93%
31.	D	88%
32.	A	58%
33.	B	97%
34.	A	66%
35.	A	74%
36.	B	82%
37.	C	96%
38.	B	92%
39.	A	89%
40.	B	90%
41.	D	73%
42.	B	86%
43.	A	82%
44.	C	80%
45.	C	84%
46.	C	72%
47.	D	57%
48.	D	81%
49.	A	70%
50.	B	73%