

6th Grade Individual Test 2006

- Which is NOT a factor of 96? 24 192 32 48
[A] 48 [B] 192 [C] 24 [D] 32
- Which of the following is true?
[A] 4725 is not divisible by 3 [B] 4725 is not divisible by 2
[C] 4725 is not a multiple of 7 [D] 4725 is not a multiple of 5
- Write the prime factorization of 264.
[A] $2 \cdot 3^3 \cdot 13$ [B] $2^3 \cdot 3 \cdot 13$ [C] $2^3 \cdot 3 \cdot 11$ [D] $2 \cdot 3^3 \cdot 11$
- Find the greatest common factor of 24 and 18. [A] 9 [B] 3 [C] 12 [D] 6
- Find the least common multiple of 24 and 36.
[A] 864 [B] 72 [C] 144 [D] 216
- Which of the following fractions is smallest? $\frac{4}{6}$, $\frac{3}{5}$, $\frac{7}{16}$, $\frac{1}{3}$
[A] $\frac{1}{3}$ [B] $\frac{7}{16}$ [C] $\frac{4}{6}$ [D] $\frac{3}{5}$
- Write 0.27 as a fraction. [A] $\frac{27}{100}$ [B] 27 [C] $\frac{3}{100}$ [D] $\frac{27}{10}$
- Subtract. Then simplify. $\frac{15}{16} - \frac{11}{20}$ [A] $\frac{63}{160}$ [B] $\frac{2}{7}$ [C] $\frac{31}{80}$ [D] $\frac{25}{64}$
- Jan has three packages of seeds. One of the packages contains 9 ounces, one contains $\frac{1}{2}$ ounces, and one contains $4\frac{2}{3}$ ounces. How many ounces of seeds does Jan have in all?
[A] $14\frac{1}{6}$ oz [B] $14\frac{5}{24}$ oz [C] $11\frac{1}{4}$ oz [D] 11 oz

10. Widget Industries had stock that sold at $65\frac{1}{4}$. After a takeover bid, the stock rose $5\frac{3}{8}$ points. What was the new price?

[A] $71\frac{5}{8}$

[B] $70\frac{5}{8}$

[C] $70\frac{1}{8}$

[D] $60\frac{1}{8}$

11. Multiply. Then simplify, if possible. $\frac{3}{35} \cdot \frac{10}{9}$

[A] $\frac{2}{15}$

[B] $\frac{6}{105}$

[C] $\frac{2}{21}$

[D] $\frac{1}{7}$

12. Find $\frac{2}{30}$ of 12.

[A] $\frac{3}{5}$

[B] $\frac{8}{3}$

[C] $\frac{1}{5}$

[D] $\frac{4}{5}$

13. Simplify the expression. $\frac{2}{7} \div \frac{8}{9}$

[A] $\frac{16}{63}$

[B] $\frac{27}{56}$

[C] $1\frac{11}{63}$

[D] $\frac{9}{28}$

Write the portion as a percent.

14. $\frac{1}{8}$

[A] $\frac{1250}{1000}\%$

[B] 0.125%

[C] $\frac{125}{100}\%$

[D] $12\frac{1}{2}\%$

15. $\frac{13}{20}$

[A] 13%

[B] 6.5%

[C] $\frac{13}{20}\%$

[D] 65%

16. Write 4.3 as a percent.

[A] 4.3%

[B] 0.043%

[C] 430%

[D] 43%

17. Write 76.3% as a decimal.

[A] 0.763

[B] 70.63

[C] 0.0763

[D] 760.3

18. Write 88% as a fraction in simplest form.

[A] $\frac{22}{25}$

[B] $\frac{44}{5}$

[C] $\frac{44}{25}$

[D] $\frac{88}{25}$

19. Laura bought a pair of boots priced at \$39.00. If the sales tax rate in Laura's state is 7%, what is the sales tax on the boots?

[A] \$27.30

[B] \$41.73

[C] \$2.73

[D] \$66.30

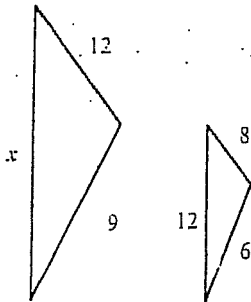
20. Last month the Rams played the Giants 8 times and defeated them 5 times. What percent of the games did the Rams win?

- [A] 62.5% [B] 55.5% [C] 57.5% [D] 67.5%

21. Solve the proportion. Check your solution. $\frac{7}{8} = \frac{x}{72}$

- [A] $x = 504$ [B] $x = 7$ [C] $x = 72$ [D] $x = 63$

22. A pair of similar triangles is shown. Find the missing length of the side.

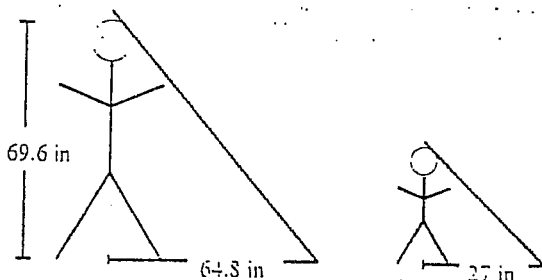


- [A] 19 [B] 19.5 [C] 18 [D] 13.5

23. A photo lab technician has a display ad that is 5 centimeters by 15 centimeters. The ad needs to be enlarged so the longer side is 39 centimeters. How long will the shorter side be after the enlargement?

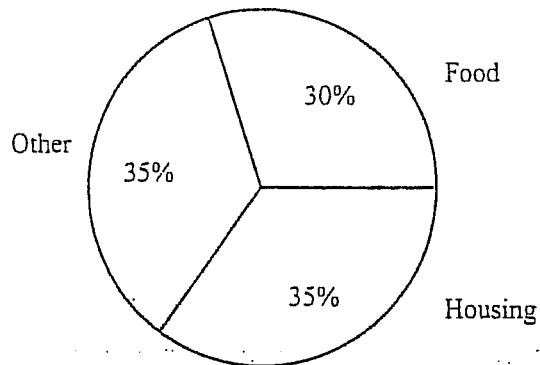
- [A] 44 cm [B] 117 cm [C] 29 cm [D] 13 cm

24. At the same time of day, a man who is 69.6 inches tall casts a 64.8-inch shadow and his son casts a 27-inch shadow. What is the height of the man's son?

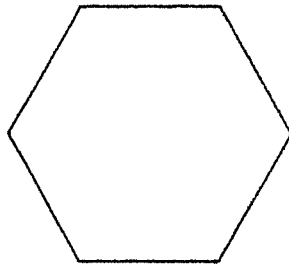


- [A] 29 in [B] 30 in [C] 93.6 in [D] 91.8 in

25. The circle graph below represents a family's monthly budget. If the total monthly budget is \$1700, how much is spent on food?



- [A] \$510 [B] \$595 [C] \$300 [D] \$350
26. An article regularly selling for \$57.91 is advertised at 20% off. Find the sale price.
[A] \$69.49 [B] \$11.58 [C] \$46.33 [D] \$56.75
27. Draw the lines of symmetry for the figure below.



How many lines of symmetry does it have?

- [A] none [B] 12 [C] 6 [D] 3

28. Estimate the angle and direction of the rotation.



[A] 90° counterclockwise

[B] 135° clockwise

[C] 30° clockwise

[D] 90° clockwise

29. You are building a model of a motorcycle. The motorcycle is 150 centimeters wide and 80 centimeters high.

a) If the model is 20 centimeters high, how wide should it be?

b) What is scale factor of the model to the real motorcycle?

[A] a. 37.5 centimeters

[B] a. 38 centimeters

b. 0.25

b. 0.30

[C] a. 20 centimeters

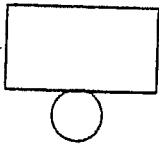
[D] a. 3.75 centimeters

b. 4

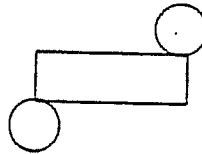
b. 2.5

30. Which net can be folded to form a cylinder?

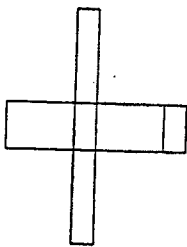
[A]



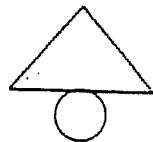
[B]



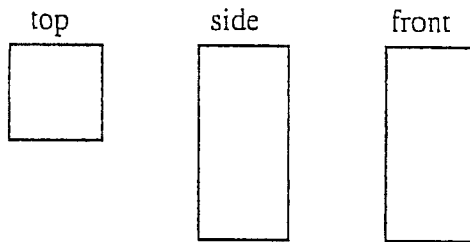
[C]



[D]

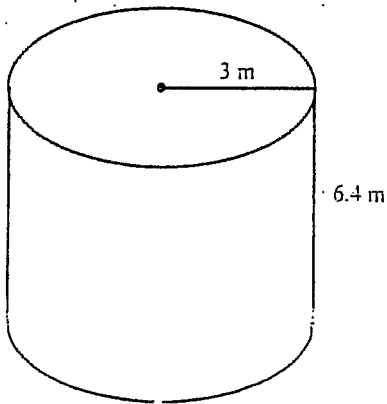


31. Which type of solid can have the top view, side view, and front view shown?



- [A] pyramid [B] cylinder [C] rectangular prism [D] triangular prism

32. Find the surface area of the cylinder. Use 3.14 for π .

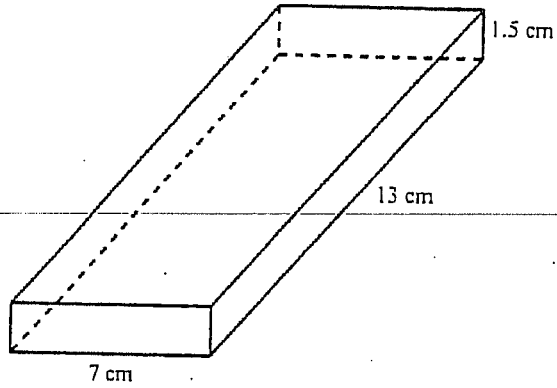


- [A] 28.20 m^2 [B] 88.58 m^2 [C] 177.10 m^2 [D] 19.20 m^2

33. Sally plans to paint a solid cube that has an edge of 7 feet. What is the total area of the surface Sally will paint?

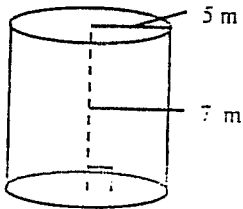
- [A] 343 ft^2 [B] 294 ft^2 [C] 49 ft^2 [D] 147 ft^2

34. Find the volume of the prism.



- [A] 86 cm^3 [B] 110.5 cm^3 [C] 121 cm^3 [D] 136.5 cm^3

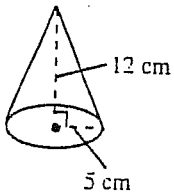
35. Find the volume of the cylinder. Use 3.14 for π .



- [A] 549.5 m^2 [B] 549.5 m^3 [C] 131.88 m^3 [D] 109.9 m^3

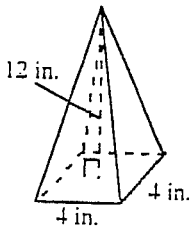
Find the volume. Use 3.14 for π .

36.



- [A] 60 cm^3 [B] 720 cm^3 [C] 314 cm^3 [D] 628 cm^3

37.



- [A] 32 in.^3 [B] 96 in.^3 [C] 192 in.^3 [D] 64 in.^3

38.

Simplify the expression. $12 \div 2^2 - 3 \div 4^2$

- [A] 256 [B] 37 [C] 289 [D] 4

39. Evaluate $2y^2(x + y)$ when $x = 8$ and $y = 4$.

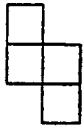
[A] 260

[B] 192

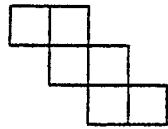
[C] 516

[D] 384

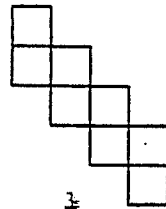
40. How many squares will be in the fifth figure of this pattern?



1



2



3

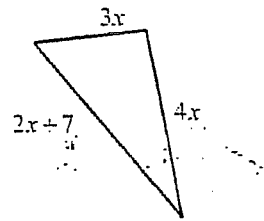
[A] 15

[B] 6

[C] 18

[D] 12

41. Write a simplified expression for the perimeter.



[A] $5x$

[B] $9x + 7$

[C] $9x$

[D] $5x + 7$

42. In an election between two candidates, 940 votes were cast. If the winner received 320 more votes than the loser, how many votes did the loser receive?

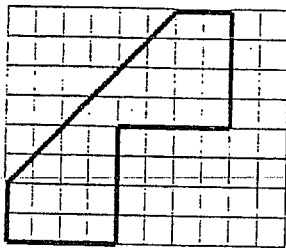
[A] 1260 votes

[B] 620 votes

[C] 630 votes

[D] 310 votes

43. Which is the best estimate of the area of the figure drawn on the grid?



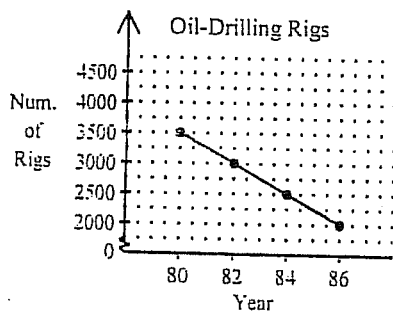
- [A] 30 square units [B] 40 square units [C] 45 square units [D] 34 square units

44. Which of the following broken-line graphs display the data below?

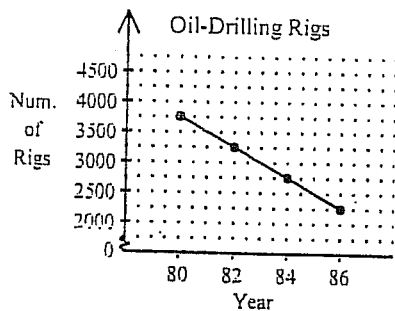
Number of Rigs Drilling for Oil (monthly averages)

Year	1980	1982	1984	1986
Number of Rigs	3500	3000	2500	2000

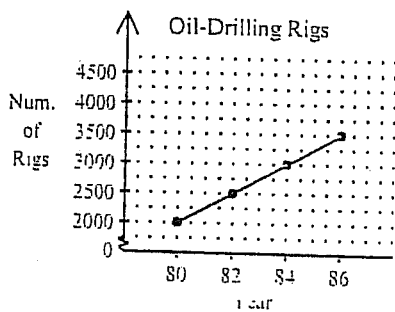
[A]



[B]

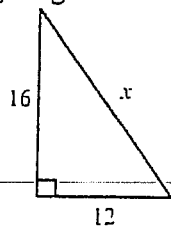


[C]



[D] none of these

49. Find the missing length. If necessary, use a calculator and round your answer to two decimal places.



- [A] $x = 22$ [B] $x = 20$ [C] $x = 18$ [D] $x = 14$
50. Solve the equation. $-5 = 6(x + 4) + 8x$

- [A] $-\frac{9}{14}$ [B] $\frac{9}{14}$ [C] $-2\frac{1}{14}$ [D] $2\frac{1}{14}$

Southeast Bulloch High School Fifth & Sixth Grade Mathematics Tournament
April 8, 2006
Sixth Grade Division Item Analysis

Number	Answer	Percent Correct
1.	B	94%
2.	B	74%
3.	C	89%
4.	D	91%
5.	B	80%
6.	A	66%
7.	A	100%
8.	C	86%
9.	A	100%
10.	B	97%
11.	C	91%
12.	D	51%
13.	D	89%
14.	D	40%
15.	D	97%
16.	C	80%
17.	A	97%
18.	A	100%
19.	C	74%
20.	A	80%
21.	D	97%
22.	C	80%
23.	D	66%
24.	A	46%
25.	A	83%
26.	C	80%
27.	C	91%
28.	B	80%
29.	A	71%
30.	B	89%
31.	C	94%
32.	C	49%
33.	B	46%
34.	D	94%
35.	B	29%
36.	C	23%
37.	D	6%
38.	A	71%
39.	D	74%
40.	D	97%
41.	B	66%
42.	D	77%
43.	A	94%
44.	A	91%
45.	A	86%
46.	C	83%
47.	C	43%
48.	D	54%
49.	B	40%
50.	C	23%