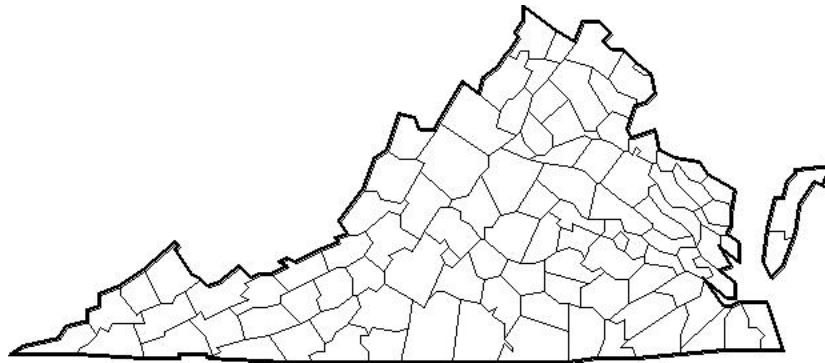


# TESTS FOR HIGHER STANDARDS

# MATHEMATICS

2002 Standards



## SIMULATION TEST

# Grade 7

**Dr. S. Stuart Flanagan, Professor Emeritus  
College of William and Mary**

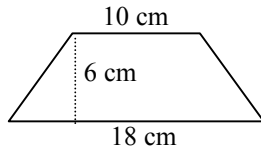
Copyright 1999-2006, S. Stuart Flanagan and David E. W. Mott  
Do not reproduce without permission. 7-1-06

Use this formula to help you find the area of a trapezoid.

$$A = \frac{1}{2} h (b_1 + b_2)$$

(7.7b)

18. Find the area of the figure.



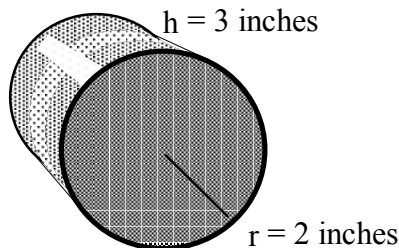
- F 36 sq. cm
- G 84 sq. cm
- H 120 sq. cm
- J 180 sq. cm

(7.8)

19. Find the volume of this cylinder.

Use this formula to help you find the volume of a cylinder.

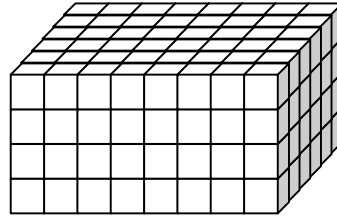
$$V = \pi r^2 h$$



$$\pi = 3.14$$

- A about 12.00 cu. in.
- B about 18.84 cu. in.
- C about 37.68 cu. in.
- D about 74.97 cu. in.

Jordan built a rectangular prism with a length of 8 cubes, a width of 6 cubes, and a height of 4 cubes.



(7.8)

20. What is the volume of Jordan's prism?

- F 52 cubes
- G 88 cubes
- H 116 cubes
- J 192 cubes

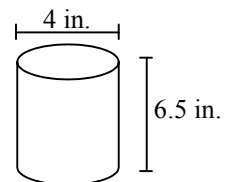
(7.8)

21. What is the total surface area of a cylinder which has a diameter of 4 inches and a height of 6.5 inches?

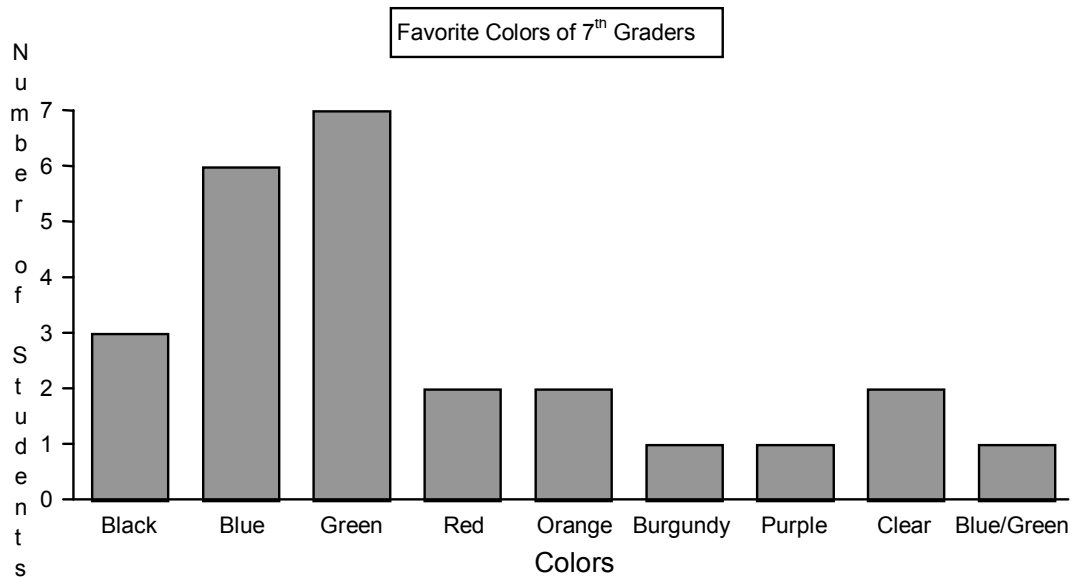
Use this formula to help you find the area of a cylinder.

$$S.A. = 2\pi r^2 + 2\pi rh$$

- A 100.48 sq. in.
- B 106.76 sq. in.
- C 263.76 sq. in.
- D 131.88 sq. in.



The seventh graders at Madison Middle School were asked to name their favorite color. Their responses were displayed in this graph.



(7.18)

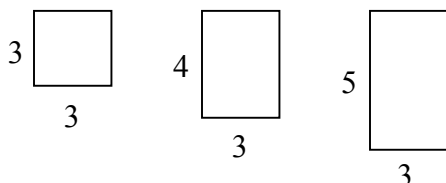
**43. If the seventh grade votes to pick class colors, which colors would probably be selected according to the survey results?**

- A Blue and Red
- B Red and Green
- C Black and Blue
- D Blue and Green

### Patterns, Functions, and Algebra

(7.19)

**44. Suzanne drew a series of rectangles in which all of the widths were 3 units and the lengths increased by 1 unit. She discovered a pattern relating the total area of the rectangles to the length of the rectangle. What choice explains what happens to the area of the rectangle as the length increases by one?**



- F The area is the length multiplied by 2 cubic units.
- G The area is  $\frac{1}{3}$  of the previous rectangle.
- H The area is 2 times the width plus the length.
- J The area for the next rectangle is 3 square units more than the last rectangle.