SAT2-MATHEMATICS Q&As

SAT Section 2: Mathematics

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QUESTION 1

If the height of a cylinder is doubled and the radius of the cylinder is halved, the volume of the cylinder

A. remains the same.

B. becomes twice as large.

C. becomes half as large.

D. becomes four times larger.

E. becomes four times smaller.

Correct Answer: C

The volume of a cylinder is equal to r2h, where r is the radius of the cylinder and h is

$$\pi\left(\frac{1}{2}\right)^2[2][1]=\pi\ \left(\frac{1}{4}\right)2=\frac{1}{2}\pi\ .$$

the height. The volume of a cylinder with a radius of 1 and a height of 1 is . If the height is doubled and the radius is halved, then the volume becomes

The volume of the cylinder has become half as large.

QUESTION 2

A music store offers customized guitars. A buyer has four choices for the neck of the guitar, two choices for the body of the guitar, and six choices for the color of the guitar. The music store offers

A. 12 different guitars.

B. 16 different guitars.

C. 24 different guitars.

D. 36 different guitars.

E. 48 different guitars.

Correct Answer: E

To find the total number of different guitars that are offered, multiply the number of neck choices by the number of body choices by the number of color choices: (4)(2)(6) = 48 different guitars.

QUESTION 3

It takes six people eight hours to stuff 10,000 envelopes. How many people would be required to do the job in three

hours?

A. 4

B. 12

C. 16

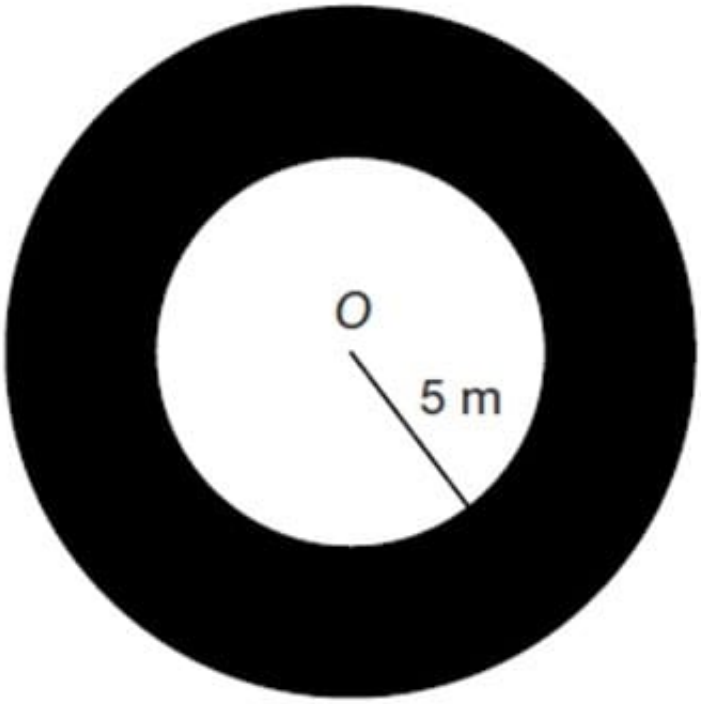
D. 18

E. 24

Correct Answer: C

Six people working eight hours produce (6)(8) = 48 work-hours. The number of people required to produce 48 work-hours in three hours is48/3 = 16.

QUESTION 4



The radius of the outer circle shown above is 1.2 times greater than the radius of the inner circle. What is

the area of the shaded region?

A. 6m2

B. 9m2

C. 25m2

D. 30m2

E. 36m2

Correct Answer: B

Explanation:

The area of a circle is equal to ?r2. The radius of the inner circle is 5 m; therefore, the area of the inner

circle is 25?m2. The radius of the outer circle is (1.2)(5) = 6 m; therefore, the area of the outer circle is

36?. Subtract the area of the inner circle from the area of the outer circle: 36? – 25? = 9?m2.

QUESTION 5

The ratio of the number of cubic units in the volume of a cube to the number of square units in the surface area of the cube is 2:3. What is the surface area of the cube?

A. 16 square units

B. 24 square units

C. 64 square units

D. 96 square units

E. 144 square units

Correct Answer: D

The volume of a cube is equal to e3, where e is the length of an edge of the cube. The surface area of a cube is equal to 6e2. If the ratio of the number of cubic units in the volume to the number of square units in the surface area is 2:3, then three times the volume is equal to two times the surface area:

$$3e^3 = 2(6e^2)$$

$$3e^3 = 12e^2$$

$$3e = 12$$

$$e = 4$$

$$6(4)^2 = 96$$

The edge of the cube is four units and the surface area of the cube is square units.