

DIMENSIONS AND SHAPES 2013 page 2

11. Which of the following is the correct formula to find the surface area (SA) of a sphere?

- A) $SA = \frac{4}{3}\pi r^2$ B) $SA = \frac{4}{3}\pi r^3$ C) $SA = 4\pi r^3$ D) $SA = 4\pi r^2$

12. If the radius of the Earth is approximately 3960 miles, what is the Earth's surface area (to the nearest square mile)?

- A) 65, 686,932 mi^2 B) 260,120,252,600 mi^2
 C) 197,060,797 mi^2 D) 780,360,757,800 mi^2

13. The volume of a sphere can be found by using the formula $V = \frac{4}{3}\pi r^3$. What is the approximate volume of the Earth (to the nearest cubic mile)?

- A) 65, 686,932 mi^2 B) 260,120,252,600 mi^2
 C) 197,060,797 mi^2 D) 780,360,757,800 mi^2

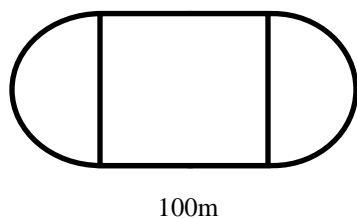
14. A case of Arizona Tea sells for \$15.95. Each case contains 24 bottles. At this price, what would you be paying for a single bottle of tea?

- A) \$0.66 B) \$1.50 C) \$1.00 D) \$0.75

15. A regular baseball diamond is a square with 90 ft. between consecutive bases. On a double play, the first baseman must throw the ball from first base to third base. Approximately how far must the first baseman throw the ball?

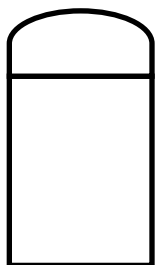
- A) 127 ft B) 90 ft C) 180 ft D) 42 ft

16. A 400m track has 100m on the straight stretch. What is the radius of the semicircles at each end of the track?



- A) 32 m
 B) 127 m
 C) 16 m
 D) 64 m

17. A Norman window is shaped like a rectangle with a semicircle on top. If the base of the window is 6 ft in length, and the height of the rectangular portion of the window is 8 ft, what is the perimeter of the window?



- A) $28 + 3\pi$
 B) $22 + 6\pi$
 C) $28 + 6\pi$
 D) $22 + 3\pi$

18. A dog park is rectangular in shape and has dimensions of 120 ft by 150 ft. There is a gravel path that runs from one corner of the park to the opposite corner of the park. What is the length of this path, to the nearest foot?

- A) 90 ft B) 192 ft C) 390 ft D) 135 ft

19. The same gravel path is 4 ft wide. What is the area of the path?

- A) 360 ft^2 B) 768 ft^2 C) 1560 ft^2 D) 540 ft^2

20. The gravel used costs \$23 for 100 ft^2 . How much does it cost to cover the path in gravel, to the nearest dollar?

- A) \$83 B) \$177 C) \$359 D) \$124

21. A men's size 7 regulation basketball has a radius of 4.695 inches. What is its circumference?

- A) 69.3in B) 32.9in C) 29.5 in D) 14.7in

DIMENSIONS AND SHAPES 2013 ANSWER KEY

1. B
2. B
3. D
4. A
5. C
6. D
7. A
8. C
9. A
10. B
11. D
12. C
13. B
14. A
15. A
16. A
17. D
18. B
19. B
20. B
21. C