

Math Level 1 SAT Practice Test 19

39. Three candidates for president of the Student Council—Ashley, José, and Kim—must each be scheduled for a single 10-minute address to the entire student body. If the order of the presentations is determined randomly, how many different orders are possible?
- (A) 3
(B) 6
(C) 9
(D) 12
(E) 27
40. If $x \neq 0$ then $\frac{8^{2x}}{2^{4x}} =$
- (A) 2^{2x}
(B) 4^{-x}
(C) 4^{2x}
(D) 4^{1-x}
(E) 8^{-x}
- All S are M .
No P are M .
41. Which of the following conclusions can be logically deduced from the two statements above?
- (A) All S are P .
(B) All M are S .
(C) Some S are not M .
(D) Some M are P .
(E) No P are S .
42. Cube Q has volume V . In terms of V , a cube with edges only one-fourth the length of those of Q will have a volume of
- (A) $\frac{V^3}{64}$
(B) $\frac{V^3}{4}$
(C) $\frac{V}{64}$
(D) $\frac{V}{4}$
(E) $\frac{\sqrt[3]{V}}{8}$
43. If θ is an acute angle and $\cos \theta = \frac{b}{c}$, $b > 0$ and $c > 0$ and $b \neq c$, then $\sin \theta =$
- (A) $\frac{b}{\sqrt{b^2 - c^2}}$
(B) $\frac{c}{\sqrt{c^2 - b^2}}$
(C) $\frac{\sqrt{b^2 - c^2}}{b}$
(D) $\frac{\sqrt{b^2 - c^2}}{c}$
(E) $\frac{\sqrt{c^2 - b^2}}{c}$
44. If a cube has an edge of length 2, what is the distance from any vertex to the center of the cube?
- (A) $\frac{\sqrt{2}}{2}$
(B) $\sqrt{3}$
(C) $2\sqrt{2}$
(D) $2\sqrt{3}$
(E) $\frac{3}{2}$
45. If $x^2 + ax + bx + ab = 0$, and $x + b = 2$, then $x + a =$
- (A) -8
(B) -4
(C) -2
(D) 0
(E) 2

46. Figure 10 shows two right circular cylinders, C and C' . If $r = kr'$ and $h = kh'$, then what is the ratio of: $\frac{\text{Volume of } C}{\text{Volume of } C'}$?

- (A) $\frac{1}{\pi}$
 (B) π
 (C) $k\pi$
 (D) $\frac{1}{k^3}$
 (E) k^3

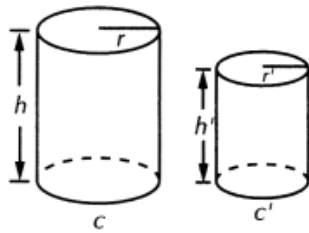


Figure 10

49. In Figure 12, the radius of the circles is 1. What is the perimeter of the shaded part of the figure?

- (A) $\frac{4\pi}{3}$
 (B) π
 (C) $\frac{2\pi}{3}$
 (D) $\frac{\pi}{3}$
 (E) $\frac{\pi}{6}$

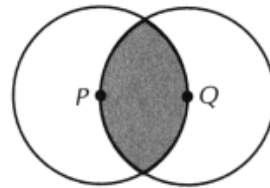


Figure 12

47. If the circumference of a circle is 1, what is its area?

- (A) .08
 (B) .79
 (C) 1.27
 (D) 3.14
 (E) 6.28

48. What are the coordinates of the point of intersection of the lines having the following equations:

$$x - \sqrt{3}y = \sqrt{3}$$

$$\sqrt{3}x + y = 1$$

- (A) $\left(-\frac{1}{2}, -\frac{\sqrt{3}}{2}\right)$
 (B) $\left(-\frac{2\sqrt{3}}{3}, -\frac{1}{2}\right)$
 (C) $\left(\frac{1}{2}, \frac{2}{\sqrt{3}}\right)$
 (D) $\left(-\frac{\sqrt{3}}{2}, -\frac{1}{2}\right)$
 (E) $\left(\frac{3}{2\sqrt{3}}, -\frac{1}{2}\right)$

50. If $f(x) = \frac{x-2}{(x-2)(x^2+2)}$, for what value of x is

$f(x)$ undefined?

- (A) -4
- (B) -2
- (C) 0
- (D) $\frac{1}{2}$
- (E) 2

39. B 40. A 41. E 42. C 43. E 44. B 45. D 46. E 47. A 48. E 49. A 50. E