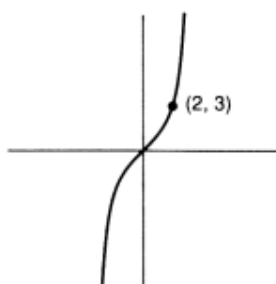


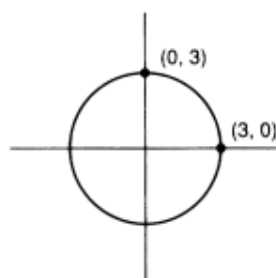
Math Level 2 SAT Practice Test 20

37. Which of the following figures represents the graph of $x = 3 \sin \theta$
 $y = 2 \cos \theta$

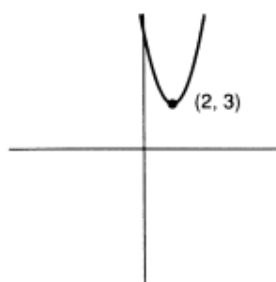
(A)



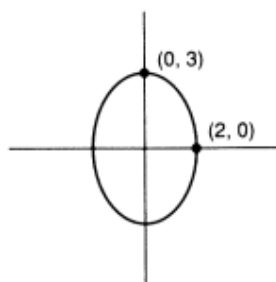
(B)



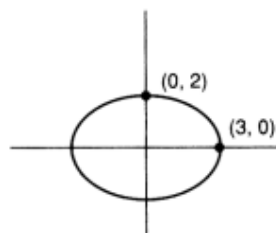
(C)



(D)



(E)



38. If $5^x = 2$, what does 3^x equal?

- (A) 2.8
- (B) 2.3
- (C) 2.1
- (D) 1.9
- (E) 1.6

39. If $4 \cos x = \sin x$ and if x is in radian measure, what is the least positive value of x ?

- (A) 6.452
- (B) 2.133
- (C) 1.326
- (D) 1.021
- (E) 0.933

40. Triangle ABC has coordinates $A(-1, -2)$, $B(0,4)$, and $C(3, -1)$. Which of the following provides the coordinates of triangle $A'B'C'$, respectively, the image of triangle ABC after a reflection in the line $y = -x$?

- (A) $(-2, -1)$, $(4,0)$, $(-3, -1)$
- (B) $(1,2)$, $(0, -4)$, $(-3,1)$
- (C) $(2,1)$, $(-4,0)$, $(1, -3)$
- (D) $(3,2)$, $(5,1)$, $(2, -2)$
- (E) $(4,0)$, $(3, -1)$, $(-1, -2)$

41. If $\sin x = \cos x$, then x could terminate only in the

- (A) first quadrant
- (B) second quadrant
- (C) first or third quadrants
- (D) second or third quadrants
- (E) second or fourth quadrants

42. If the line $x = k$ is tangent to the circle $(x - 2)^2 + (y + 1)^2 = 4$, then the point of tangency is

- (A) $(-6, -1)$ or $(2, -1)$
- (B) $(-2, -1)$ or $(6, -1)$
- (C) $(0, -1)$ or $(4, -1)$
- (D) $(0,1)$ or $(4,1)$
- (E) $(2,1)$ or $(6,1)$

43. The graph of $y = 2 \cos 2x + 2$ intersects the y -axis where $y =$

- (A) 0
- (B) 2
- (C) 3
- (D) 4
- (E) 5

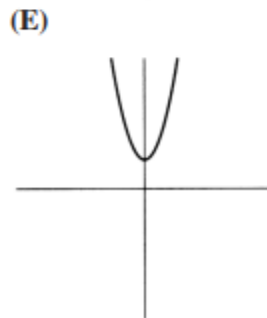
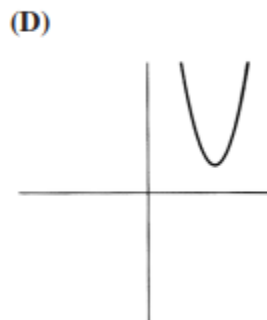
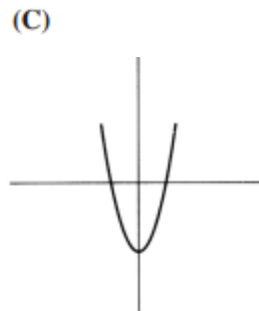
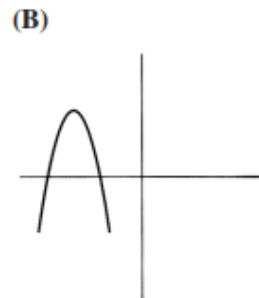
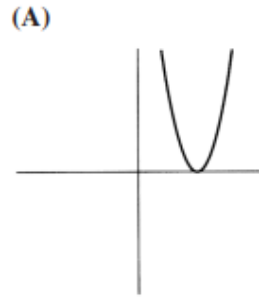
44. What is the last term in the expansion $(2x + 3y)^4$?

- (A) y^4
- (B) $9y^4$
- (C) $27y^4$
- (D) $81y^4$
- (E) $(xy)^4$

45. If two unbiased dice are rolled, what is the probability that the number of dots on the two exposed faces will total 4?

- (A) $\frac{1}{36}$
- (B) $\frac{1}{18}$
- (C) $\frac{1}{12}$
- (D) $\frac{1}{9}$
- (E) $\frac{1}{6}$

46. Which of the following could be a graph of the equation $y = ax^2 + bx + c$, where $b^2 - 4ac = 0$?



47. A plane cuts through a cube in such a way that the plane passes through three of the cube's vertices, no two of which lie on the same edge. If the edge of the cube has a length of 1, what is the surface area of the smaller fragment of the cube?

- (A) 2.4
- (B) 2.7
- (C) 3.1
- (D) 3.7
- (E) 4.3

48. Which of the following equations describes a parabola with focus (2,3) and directrix $y = 0$?

- (A) $(x + 2)^2 + (y + 3)^2 = 2$
- (B) $(x - 2)^2 + (y - 3)^2 = 4$
- (C) $(x - 2)^2 = -(y - 3)^2$
- (D) $(x - 2)^2 = 2(y + 3)$
- (E) $(x - 2)^2 = 3(2y - 3)$

49. A student taking a true–false test guesses randomly on three items. What is the probability that exactly two of the guesses will be correct?

- (A) $\frac{1}{16}$
- (B) $\frac{1}{8}$
- (C) $\frac{1}{4}$
- (D) $\frac{3}{8}$
- (E) $\frac{1}{2}$

50. (1) Given any individual x , if x is a C , then x is also a Q .

(2) There exists at least one individual x such that x is not a Q .

Which of the following conclusions can be logically deduced from the two statements above?

(A) There exists at least one x such that x is not a C .

(B) There exists at least one x such that x is a C .

(C) There exists at least one x such that x is a Q .

(D) There are no x 's that are C 's.

(E) There are no x 's that are Q 's.

37. E 38. E 39. C 40. C 41. C 42. C 43. D 44. D 45. C 46. A 47. B 48. E 49. D 50. A