ACT MATH TEST

- Question #1: What is sec(a)sin(a) + csc(a)cos(a) , if a = 45^{o}?

  (a) √2
  (b) 2
  (c) 1
  (d) 1/√2
  (e) 1/2

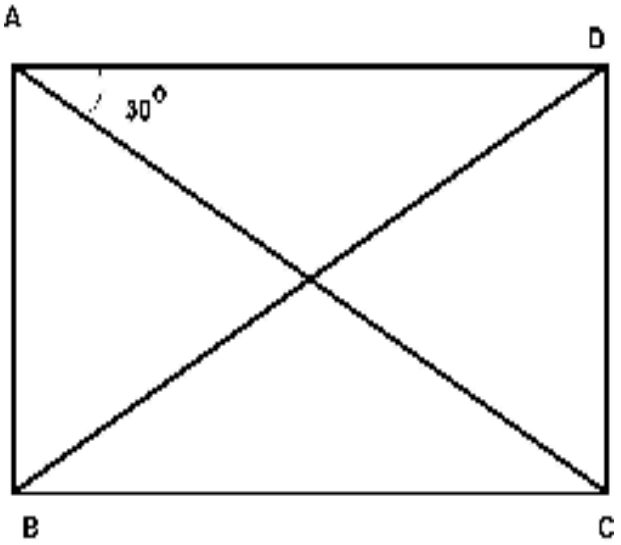
- Question #2: In the standard (x,y) coordinate plane, 3 corners of a square are (4,–3), (–4,3), and (–4,-3). What are the coordinates of the square's fourth corner?

  (a) (1/4, -1/3)
  (b) (4, 3)
  (c) (3, 4)
  (d) (3, -4)
  (e) (3, -4)

- Question #3: Prizes totaling $60,000 were awarded unequally between 3 contestants. Which of the following choices could be the highest prize?>br>

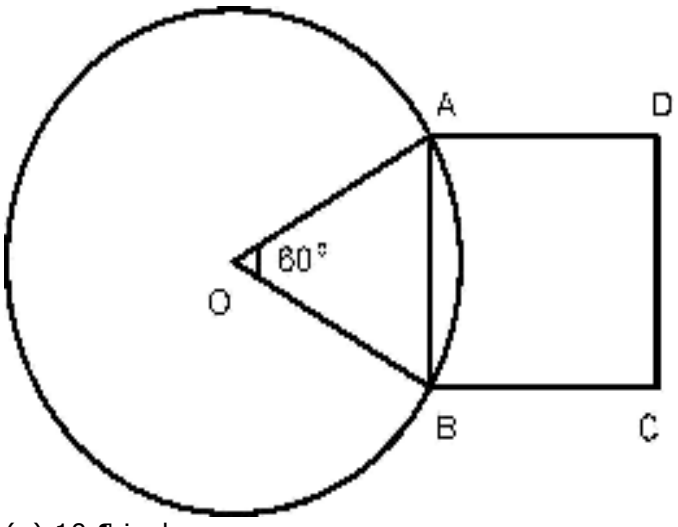
  (a) $5,000
  (b) $10,000
  (c) $15,000
  (d) $25,000
  (e) $65,000

- Question #4: What is the area of rectangle ABCD if the length of the side AB is 5?



(a) 40
(b) 50
(c) 25
(d) 25√3
(e) 15√3

- Question #5: What is the circumference of circle O from the figure below if the length of the sides of the ABCD square is 5 inches?



(a) 10·¶ inches
(b) 5·¶ inches
(c) ¶ inches
(d) 16 inches
(e) 12; inches

- Question #6: Ellipse $(x - 3)^2/9 + (y - 5)^2/5 = 1$ is inscribed in the circle O. The transverse of the ellipse is equal with the diameter of the circle O. The equation that describes circle O in the standard (x,y) plane is:

(a) $(x + 3)^2 + (y + 5)^2 = 3^2$
(b) $(x - 3)^2 + (y - 5)^2 = 1$
(c) $(x - 3)^2 + (y - 5)^2 = 3^2$
(d) $(x - 3)^3 + (y - 5)^3 = 3^3$
(e) $(x - 3)^2 + (y - 5)^2 = 7$

- Question #7: The marked price of the shirts in a store is $25. During one week, the store sells m shirts at the marked price and n shirts discounted 25% of the marked price. Which of the following is an expression of the average price of the shirts sold?

(a) ($25m + $18.75n) /(m + n)
(b) ($25m + $18.75n) /(2m + 2n)
(c) $25m + $18.75n
(d) ($25 + $20) /(m + n)
(e) (m + n) / ($25m + $20n)

- Question #8: A box contains 7 blue marbles, 4 red marbles and 6 green marbles. How many additional blue marbles must be added in the box so that the probability of randomly drawing a blue marble is 1/2?

(a) 2
(b) 3
(c) 4
(d) 5
(e) 6

- Question #9: A number is increased 50% and the resulting number is decreased 50%. The final number is what percent of the original number?

(a) 50%
(b) 125%
(c) 75%
(d) 100%
(e) 105%

- Question #10: The inequality $2x + 3 > 5x - 6$ is equivalent with which of the following inequalities?

(a) $x > 6$
(b) $x < 6$
(c) $x > 3$
(d) $x < 3$
(e) $x < 10$

Solutions:

Question #1: b
Question #2: b
Question #3: d
Question #4: d
Question #5: a
Question #6: c
Question #7: a
Question #8: b
Question #9: c
Question #10: d