MAC 1105 EMBEDDED QUESTIONS Spring 2010

MULTIPLE CHOICE. Choose the one alternative that best completes the statement or answers the question.

Determine which value(s), if any, must be excluded from the domainof the variable in the expression.

1) $\dfrac{x^2 + 7x + 12}{x^3 - 16x}$

A) $x = 4, x = -4$
B) $x = 4, x = -4, x = 0$
C) $x = 0$
D) $x = 4, x = 0$
E) None of the above

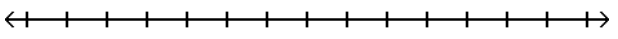
Find how many solutions, if any, of the equation.

2) $16x^2 + 48x + 27 = 0$

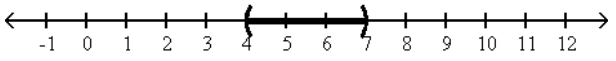
A) has a repeated root
B) has two positive solutions
C) has one negative solution and one positive solution
D) has two negative solutions
E) has no real solution

Solve the inequality. Express your answer using interval notation.

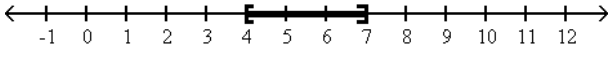
3) $-31 \le -4x - 3 \le -19$



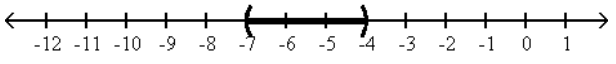
A) (4, 7)



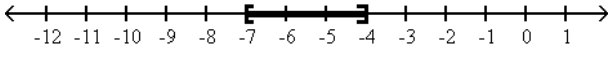
B) [4, 7]



C) (-7, -4)



D) [-7, -4]



E) None of the above.

Find the center (h, k) and radius r of the circle with the given equation.

4) $(x + 5)^2 + (y - 4)^2 = 5$

A) (h, k) = (-5, 4); r = $\sqrt{5}$
B) (h, k) = (5, -4); r = $\sqrt{5}$
C) (h, k) = (-5, 4); r = 25
D) (h, k) = (5, -4); r = 5
E) (h, k) = (-5, 4); r = 5

Solve the problem.

5) Find

a) the slope of the line containing the two points,

b) the midpoint M of these two points.

A = (-1, 8) and B= (3, 10)

A) slope = 1, and M = (1, 9)
B) slope = 1, and M = (-2, -1)
C) slope = 1/2, and M = (-2, -1)
D) slope = 1/2, and M = (1, 9)
E) slope = -1/2, and M = (1, 9)

6) Marty's Tee Shirt & Jacket Company is to produce a new line of jackets with an embroidery of a Great Pyrenees dog on the front. There are fixed costs of $690 to set up for production, and variable costs of $47 per jacket. Write an equation expressing the total cost, C(x), encountered by Marty's Company in producing x jackets. Find the total amount of jackets that can be produced with $6471.

A) C(x) = 690x + 47 210 jackets
B) C(x) = 690 - 47x; 120 jackets
C) C(x) = 690 + 47x; 123 jackets
D) C(x) = (690 + 47) x; 98 jackets
E) None of the above.