MAC 1105 Module Test 11

Name_____

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

Solve the polynomial equation by factoring.

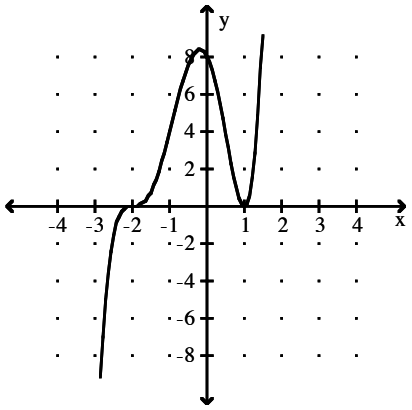
1) $-9x^4 + 6x^3 + 8x^2 = 0$

A) $-\frac{2}{3}, \frac{4}{3}, 0$ B) $\frac{2}{3}, \frac{4}{3}, 0$ C) $-\frac{2}{3}, -\frac{4}{3}$ D) $\frac{2}{3}, -\frac{4}{3}, 0$

Answer: A
Objective: (4.3) Solve Polynomial Equation by Factoring

Use the graph of the polynomial function f(x) to solve f(x) = 0.

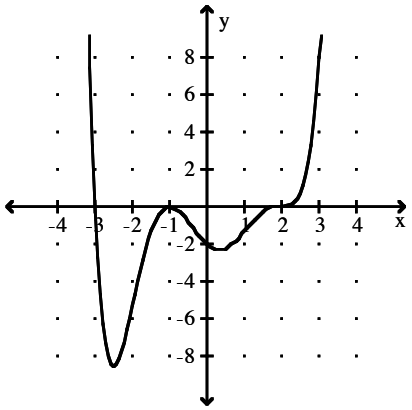
2)



A) –2, 0, 1 B) –2, 1, 8 C) –1, 2 D) –2, 1

Answer: D
Objective: (4.3) Use Graph to Solve Polynomial Equation

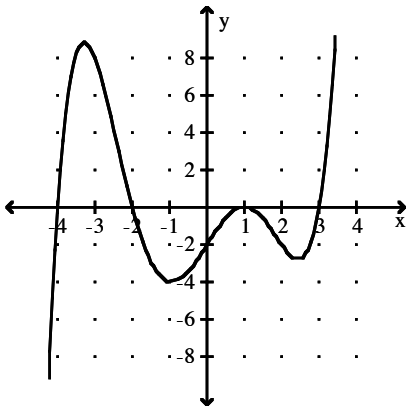
3)



A) –3, –1, 2 B) 1, 2, 3 C) –2, 1, 3 D) –3, 2

Answer: A
Objective: (4.3) Use Graph to Solve Polynomial Equation

4)



A) –3, –1, 2, 4 B) –4, –2, 3 C) –3, 2, 4 D) –4, –2, 1, 3

Answer: D
Objective: (4.3) Use Graph to Solve Polynomial Equation

Solve the polynomial equation by factoring.

5) $x^4 - 256 = 0$

A) 32, –32 B) 4, –4 C) 16, –16 D) 8, –8

Answer: B
Objective: (4.3) Solve Polynomial Equation by Factoring

Solve the problem.

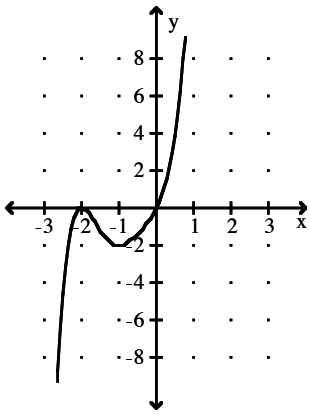
6) Suppose a business can sell x gadgets for $p = 250 - 0.01x$ dollars apiece, and it costs the business $c(x) = 1000 + 25x$ dollars to produce the x gadgets. Determine the production level and cost per gadget required to maximize profit.

A) 111 gadgets at $248.89 each B) 10,000 gadgets at $150.00 each
C) 11,250 gadgets at $137.50 each D) 13,750 gadgets at $112.50 each

Answer: C
Objective: (4.3) Solve Apps: Solution of Polynomial Equations

Use the graph of the polynomial function f(x) to solve f(x) = 0.

7)



A) 0 B) –2, 0 C) –2 D) 0, 2

Answer: B
Objective: (4.3) Use Graph to Solve Polynomial Equation

Solve the polynomial equation by factoring.

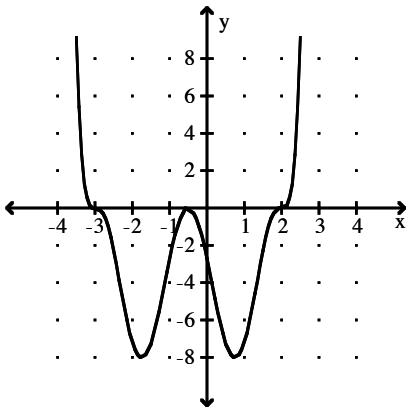
8) $x^3 - 16x = 0$

A) 0, 4, –4 B) 0, 8, –8 C) 8, –8 D) 4, –4

Answer: A
Objective: (4.3) Solve Polynomial Equation by Factoring

Use the graph of the polynomial function f(x) to solve f(x) = 0.

9)



A) –3, 2 B) –2, 3 C) $-3, -\frac{1}{2}, 2$ D) $-2, \frac{1}{2}, 3$

Answer: C
Objective: (4.3) Use Graph to Solve Polynomial Equation

Solve the polynomial equation by factoring.

10) $x^3 + 6x^2 - x - 6 = 0$

A) 1, –1, –7 B) 1, –2, 8 C) 1, –1, 6 D) 1, –1, –6

Answer: D
Objective: (4.3) Solve Polynomial Equation by Factoring

Solve the polynomial equation by using the root method.

11) $\frac{1}{8}x^4 - 512 = 0$

A) 8, 0 B) 8 C) –8 D) 8, –8

Answer: D
Objective: (4.3) Solve Polynomial Equation by Root Method

Solve the polynomial equation by factoring.

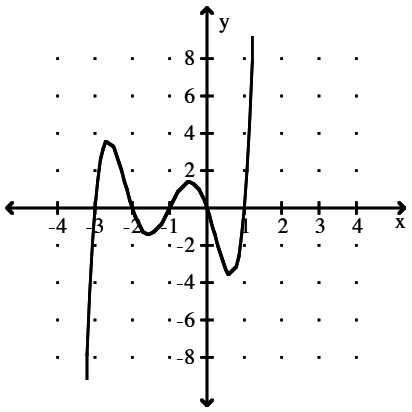
12) $x^3 + 5x^2 + 6x = 0$

A) 3, 2 B) –3, –2 C) 0, –3, –2 D) 0, 3, 2

Answer: C
Objective: (4.3) Solve Polynomial Equation by Factoring

Use the graph of the polynomial function f(x) to solve f(x) = 0.

13)



A) –1, 1, 2, 3 B) –1, 0, 1, 2, 3 C) –3, –2, –1, 0, 1 D) –3, –2, –1, 1

Answer: C
Objective: (4.3) Use Graph to Solve Polynomial Equation

Solve the polynomial equation by factoring.

14) $x^3 - 3x^2 - x + 3 = 0$

A) 1, –2, 5 B) 1, –1, –4 C) 1, –1, 3 D) 1, –1, –3

Answer: C
Objective: (4.3) Solve Polynomial Equation by Factoring

15) $4x^3 - 20x^2 - x + 5 = 0$

A) $\frac{1}{2}, -\frac{1}{2}, 5$ B) $-\frac{1}{2}, -\frac{1}{2}, 5$ C) 2, –2, 5 D) 1, –1, 5

Answer: A
Objective: (4.3) Solve Polynomial Equation by Factoring

Solve the problem.

16) If the price for a product is given by $p = 4900 - x^2$, where x is the number of units sold, then the revenue is given by $R = px = 4900x - x^3$. How many units must be sold to give zero revenue?

A) 4900 B) 0, 4900 C) 0 D) 0, 70

Answer: D
Objective: (4.3) Solve Apps: Solution of Polynomial Equations

Solve the polynomial equation by factoring.

17) $x^3 - 8x^2 + 9x + 18 = 0$

A) 4, 7, –1 B) –3, –6, 0 C) –4, –7, 1 D) 3, 6, –1

Answer: D
Objective: (4.3) Solve Polynomial Equation by Factoring

18) $2x^3 - 4x^2 - 2x + 4 = 0$

A) –1, 1, –2 B) 1, –1, 2 C) 1, 2 D) –1, 2

Answer: B
Objective: (4.3) Solve Polynomial Equation by Factoring

Solve the problem.

19) The Cool Company determines that the supply function for its basic air conditioning unit is $S(p) = 40 + 0.008p^3$ and that its demand function is $D(p) = 200 - 0.16p^2$, where p is the price. Determine the price for which the supply equals the demand.

A) \$22.36 B) \$21.86 C) \$22.86 D) \$21.36

Answer: B
Objective: (4.3) Solve Apps: Solution of Polynomial Equations

Solve the polynomial equation by using the root method.

20) $\frac{1}{3}x^3 + 9 = 0$

A) 3, –3 B) 3, 0 C) 3 D) –3

Answer: D
Objective: (4.3) Solve Polynomial Equation by Root Method