Group Review Assignment (6.1–6.6)

Name_____

MULTIPLE CHOICE. Choose the answer that best completes the statement or answers the question. Clearly write your choice in the blank provided. There is only one answer per question. You may write on this test. If a question appears to not have instructions, the instructions for the previous question apply. Occasionally a question's answers will not be all on one page. Good luck and have fun!

Factor the four–term polynomial by grouping.

1) $20x^6 - 12x^3 + 15x^3 - 9$ 1) _____

A) $(4x^3 + 3)(5x^3 - 3)$

B) $(20x^3 - 3)(x^3 + 3)$

C) $(4x^6 + 3)(5x - 3)$

D) $(4x^3 - 3)(5x^3 + 3)$

Factor the trinomial completely. If the polynomial cannot be factored, write "prime."

2) $4x - 21 + x^2$ 2) _____

A) $(x - 7)(x + 1)$

B) $(x - 7)(x + 3)$

C) $(x + 7)(x - 3)$

D) prime

Factor completely.

3) $6y^2 + 27y - 15$ 3) _____

A) $3(2y - 1)(y + 5)$

B) $3(2y + 1)(y - 5)$

C) prime

D) $(6y - 3)(y + 5)$

Factor the polynomial by grouping.

4) $2x^4 - 3x^2 + 4x^2 - 6$ 4) _____

A) $(x + 2)(3x - 2)$

B) $(2x^2 + 2)(x^2 - 3)$

C) prime

D) $(x^2 + 2)(2x^2 - 3)$

Factor the trinomial by grouping (called the AC method in Class Notes).

5) $15y^2 - 22y + 8$ 5) _____

A) $(3y + 2)(5y + 4)$

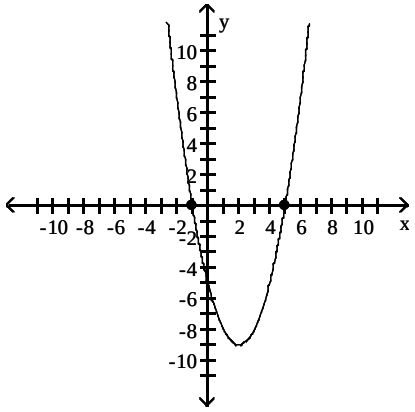
B) $(3y - 2)(5y - 4)$

C) $(15y + 2)(y + 4)$

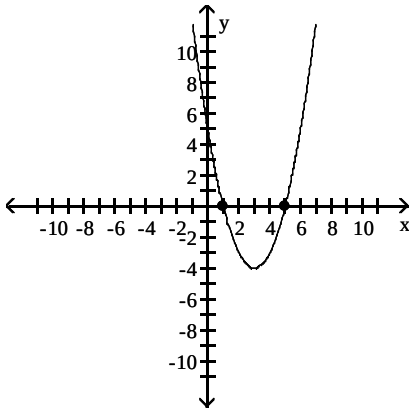
D) prime

Match the equation with its graph. Hint: Find the x intercepts using algebra and compare them to the graphs.

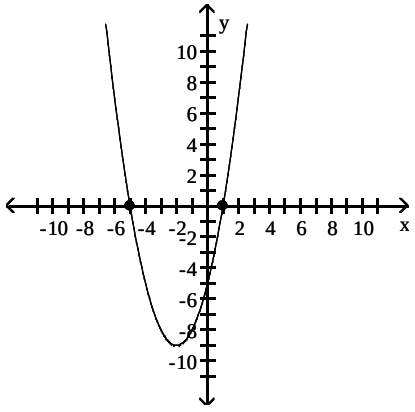
6) $y = (x - 1)(x + 5)$ 6) _____



A)

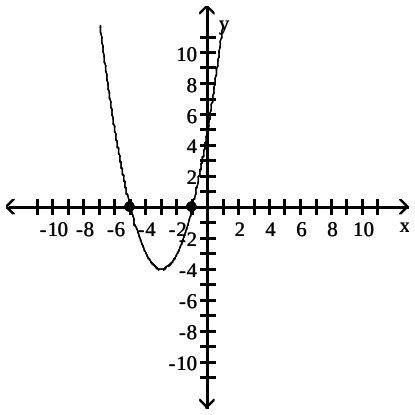


B)



C)

D)



Find the x–intercepts of the graph of the following equation.

7) $y = 4x^2 + 4x$ 7) _____

A) $(-1, 0), (0, 0)$

B) $(0, 0)$

C) $(-1, 0)$

D) $(-1, 0), (4, 0)$

Factor the sum or difference of two cubes.

8) $x^3 - 343$ 8) _____

A) $(x + 7)(x^2 - 7x + 49)$

B) $(x - 7)(x^2 + 7x + 49)$

C) $(x - 7)(x^2 + 49)$

D) $(x + 343)(x + 1)(x - 1)$

Solve the equation.

9) $(x - 3)(x + 7) = 0$ 9) _____

A) 3, –7

B) 3, 7

C) 3, –3, 7, –7

D) –3, 7

10) $y^3 + 8y^2 + 16y = 0$ 10) _____

A) 0, –4

B) 4, –4

C) 0, –4, 4

D) 0, 4

Answer Key
Testname: 16A_GRPREVASS_61_66

1) A
Objective: (6.1) Factor a Polynomial by Grouping

2) C
Objective: (6.2) Factor Trinomials of the Form x^2 + bx + c

3) A
Objective: (6.3) Factor Out a GCF Before Factoring a Trinomial of the Form ax^2 + bx + c

4) D
Objective: (6.4) Use the Grouping Method to Factor Trinomials of the Form ax^2 + bx +c

5) B
Objective: (6.4) Use the Grouping Method to Factor Trinomials of the Form ax^2 + bx +c

6) C
Objective: (6.6) Find the x–Intercepts of the Graph of a Quadratic Equation in Two Variables

7) A
Objective: (6.6) Find the x–Intercepts of the Graph of a Quadratic Equation in Two Variables

8) B
Objective: (6.5) Factor the Sum or Difference of Two Cubes

9) A
Objective: (6.6) Solve quadratic equations by factoring.

10) A
Objective: (6.6) Solve equations with degree greater than 2 by factoring.

Factorization Formulas for Chapter 6 Test:

Sum of cubes

$$a^3 + b^3 = (a + b)(a^2 - ab + b^2)$$

Difference of cubes

$$a^3 - b^3 = (a - b)(a^2 + ab + b^2)$$