

Student: _____
Date: _____

Instructor: Ray Brown
Course: M055 Sum17 CAI 10054 G41

Assignment: ch13rev HW

1. Factoring will be done throughout the course. Make sure you understand the concepts. Click the link below to watch a video reviewing concepts in this chapter. You are encouraged to watch the video and work problems with the instructor to help ensure your understanding of the material.

[Ch13 Review Video](#)¹

- True - I understand the concept.
 False - I am not understanding the concept and intend to seek assistance.

1: <http://www.screencast.com/t/hgbyEYKpQx0>

Answer: True - I understand the concept.

2. Select the answer that best completes the given statement.

When you are factoring polynomials, a good first step is to factor out the (1) _____

- (1) LCM.
 GCF.
 common factor.
 first term.

Answer: (1) GCF.

3. Factor by grouping.

$$9y^3 + y^2 + 9y + 1$$

$$9y^3 + y^2 + 9y + 1 = \underline{\hspace{2cm}} \text{ (Factor completely.)}$$

$$\text{Answer: } (y^2 + 1)(9y + 1)$$

4. Factor the expression.

$$15y^3 - 5y^2$$

$$15y^3 - 5y^2 = \underline{\hspace{2cm}}$$

$$\text{Answer: } 5y^2(3y - 1)$$

5. Factor the expression.

$$16x^4y^2 - 4x^3y^3$$

$$16x^4y^2 - 4x^3y^3 = \underline{\hspace{2cm}}$$

Answer: $4x^3y^2(4x - y)$

6. Factor the trinomial.

$$x^2 + 11x + 30$$

Select the correct choice below and, if necessary, fill in the answer box to complete your choice.

- A. $x^2 + 11x + 30 = \underline{\hspace{2cm}}$
- B. The trinomial is prime.

Answer: A. $x^2 + 11x + 30 = \underline{\mathbf{(x + 5)(x + 6)}}$

7. Factor the trinomial.

$$y^2 + 16y + 28$$

Select the correct choice below and, if necessary, fill in the answer box to complete your choice.

- A. $y^2 + 16y + 28 = \underline{\hspace{2cm}}$
- B. The trinomial is prime.

Answer: A. $y^2 + 16y + 28 = \underline{\mathbf{(y + 14)(y + 2)}}$

8. Factor the trinomial completely.

$$12y^2 - 27y + 15$$

Select the correct choice below and, if necessary, fill in the answer box to complete your choice.

- A. $12y^2 - 27y + 15 = \underline{\hspace{2cm}}$ (Factor completely.)
- B. The polynomial is prime.

Answer: A. $12y^2 - 27y + 15 = \underline{\mathbf{3(y - 1)(4y - 5)}}$ (Factor completely.)

9. Factor.

$$3 - 2x - 8x^2$$

Select the correct choice below and, if necessary, fill in the answer box to complete your choice.

- A. $3 - 2x - 8x^2 =$ _____ (Factor completely.)
- B. The trinomial is not factorable.

Answer: A. $3 - 2x - 8x^2 =$ $-(4x + 3)(2x - 1)$ (Factor completely.)

10. Factor.

$$-5x^2 + 14x + 3$$

Select the correct choice below and fill in any answer boxes within your choice.

- A. $-5x^2 + 14x + 3 =$ _____
- B. The polynomial is prime.

Answer: A. $-5x^2 + 14x + 3 =$ $-(x - 3)(5x + 1)$

11. Factor the following binomial completely.

$$x^2 + 49$$

Select the correct choice below and, if necessary, fill in the answer box to complete your choice.

- A. $x^2 + 49 =$ _____
- B. $x^2 + 49$ is prime.

Answer: B. $x^2 + 49$ is prime.

12. Factor.

$$9x^2 - 49$$

Select the correct choice below and, if necessary, fill in the answer box to complete your choice.

- A. $9x^2 - 49 =$ _____
- B. The polynomial is prime.

Answer: A. $9x^2 - 49 =$ $(3x + 7)(3x - 7)$

13. Factor as a perfect square trinomial whenever possible.

$$81y^2 + 126y + 49$$

Select the correct choice below and, if necessary, fill in the answer box to complete your choice.

- A. $81y^2 + 126y + 49 =$ _____
- B. The polynomial is prime.

Answer: A. $81y^2 + 126y + 49 =$ $(9y + 7)^2$

14. Select the answer that best completes the given statement.
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$$y^3 - 8 = (1) \underline{\hspace{2cm}}$$

- (1) $(y - 2)(y^2 + 2y + 4)$
- $(y - 2)(y^2 - 2y + 4)$
- $(y + 2)(y^2 + 2y + 4)$
- $(y + 2)(y^2 - 2y + 4)$

Answer: (1) $(y - 2)(y^2 + 2y + 4)$

15. Factor.

$$64x^3 + 27y^3$$

$64x^3 + 27y^3 =$ _____

(Simplify your answer. Factor completely.)

Answer: $(4x + 3y)(16x^2 - 12xy + 9y^2)$

16. Solve the equation.

$$(x - 2)(4x + 7) = 0$$

$x =$ _____ (Use a comma to separate answers as needed.)

Answer: $2, -\frac{7}{4}$

17. Solve the equation.

$$x(x - 5)(x - 4) = 0$$

x = _____

(Use a comma to separate answers as needed.)

Answer: 0,5,4

18. Solve and check.

$$v^2 - 25 = 0$$

v = _____

(Type an integer or a simplified fraction. Use a comma to separate answers as needed.)

Answer: 5, - 5

19. Solve and check.

$$25n^2 - 16 = 0$$

n = _____

(Type an integer or a simplified fraction. Use a comma to separate answers as needed.)

Answer: $-\frac{4}{5}, \frac{4}{5}$

20. Solve and check.

$$c^2 + 7c + 12 = 0$$

c = _____

(Type an integer or a simplified fraction. Use a comma to separate answers as needed.)

Answer: - 4, - 3

21. Solve and check.

$$x(x - 8) = 33$$

x = _____

(Type an integer or a simplified fraction. Use a comma to separate answers as needed.)

Answer: 11, - 3

22. Solve.

$$z^3 - 4z^2 - 5z = 0$$

What are the solutions of the equation?

 (Use a comma to separate answers as needed.)

Answer: -1,5,0

23. Solve.

$$6z^3 + 18z^2 = 168z$$

$z =$ _____

(Simplify your answer. Use a comma to separate answers as needed. Type each solution only once.)

Answer: 0,4, -7