

1. Factor:

$$y^2 + 4y + 4$$

2. Factor:

$$c^2 + 6c + 9$$

3. Factor:

$$a^2 - 4a + 4$$

4. Factor:

$$b^2 - 6b - 9$$

5. Factor:

$$x^2 + 4xy + 4y^2$$

6. Factor:

$$a^2 - 25$$

7. Factor:

$$25y^2 - 9$$

8. Factor:

$$b^{20} - 9$$

9. Factor:

$$25x^2 - 9y^2$$

10. Factor:

$$9c^2x^2 - 4$$

11. Factor:

$$z^2 - 10z + 25$$

12. Factor:

$$x^2 - 4x - 4$$

13. Factor:

$$z^2 + 4za + 4a^2$$

14. Factor:

$$c^2 - 9$$

15. Factor:

$$49c^2 - 16$$

16. Factor:

$$x^{20} - 16$$

17. Factor:

$$49z^2 - 16y^2$$

18. Factor:

$$4a^2b^2 - 9$$

19. Multiply:

$$(4x^2 - 2)(x^2 - 2)$$

20. Multiply:

$$(4x^2 - 2)(x^2 - 2)$$

21. Multiply:

$$(7x^2 - 7y)(4x^2 - y)$$

22. Multiply:

$$(5x^2 - 5y)(2x^2 - y)$$

23. Factor the following expression:

$$x^3 - 512$$

24. Factor the following expression:

$$y^3 + 512$$

25. Factor the following expression:

$$64a^3 + 729$$

26. Factor the following expression:

$$x^3 - 729$$

27. Factor the following expression:

$$y^3 + 216$$

28. Factor the following expression:

$$8a^3 + 729$$

29. Factor the following expression:

$$125x^3 - 64y^3$$

30. Factor the following expression:

$$27x^3 - 64y^3$$

Answer Key

1. $(y+2)^2$
2. $(c+3)^2$
3. $(a-2)^2$
4. Nonfactorable
5. $(x+2y)^2$
6. $(a+5)(a-5)$
7. $(5y+3)(5y-3)$
8. $(b^{10}+3)(b^{10}-3)$
9. $(5x+3y)(5x-3y)$
10. $(3cx+2)(3cx-2)$
11. $(z-5)^2$
12. Nonfactorable
13. $(z+2a)^2$
14. $(c+3)(c-3)$
15. $(7c+4)(7c-4)$
16. $(x^{10}+4)(x^{10}-4)$
17. $(7z+4y)(7z-4y)$
18. $(2ab+3)(2ab-3)$
19. $4x^4 - 10x^2 + 4$
20. $4x^4 - 10x^2 + 4$
21. $28x^4 - 35x^2y + 7y^2$
22. $10x^4 - 15x^2y + 5y^2$
23. $(x-8)(x^2 + 8x + 64)$
24. $(y+8)(y^2 - 8y + 64)$
25. $(4a+9)(16a^2 - 36a + 81)$
26. $(x-9)(x^2 + 9x + 81)$
27. $(y+6)(y^2 - 6y + 36)$
28. $(2a+9)(4a^2 - 18a + 81)$
29. $(5x-4y)(25x^2 + 20xy + 16y^2)$
30. $(3x-4y)(9x^2 + 12xy + 16y^2)$

