

**MPM 2D1**  
**Revisit Factoring Skills**

Common Factor

1a)  $2a^2 - 6a$

b)  $15xy - 10xy^2$

c)  $64x^6y^2 - 32x^4y^4$

d)  $x^4 - 5x^3 + 3x^2$

e)  $45a^2b - 15ab^2 - 60ab$

f)  $x(a + b) + y(a + b)$

g)  $2ax - 3bx - 2ay + 3by$

h)  $x^2 + y - xy - x$

Factoring Trinomials

2a)  $x^2 - 9x + 20$

b)  $m^2 - 13m + 42$

c)  $a^2 + 6a + 9$

d)  $25 - 10x + x^2$

e)  $a^2 - 3ab - 10b^2$

f)  $3x^2 + 3x - 6$

g)  $x^2 + 8xy + 15y^2$

h)  $3y^2 + 12y - 15$

3a)  $4x^2 + 8x + 3$

b)  $9x^2 + 15x + 4$

c)  $2y^2 + 3y + 1$

d)  $3x^2 - 5x - 2$

e)  $5x^2 - 11x + 2$

f)  $6m^2 - 11m - 10$

g)  $10b^2 + b - 3$

h)  $3x^2 + 13m + 4$

Factoring Special Products

4a)  $y^2 + 8y + 16$

b)  $m^2 - 6m + 9$

c)  $x^2 - 25$

d)  $9x^2 - 49$

e)  $4a^2 + 4a + 1$

f)  $x^2 - 4y^2$

g)  $25a^2 - 40ab + 16b^2$

h)  $(a + b)^2 - c^2$

i)  $c^2 - (2a - b)^2$

You decide

5a)  $a^2 - ab - 56b^2$

b)  $6a^2 + 5a + 1$

c)  $m^4 - 5m^2 - 36$

d)  $2x^2 - 8$

e)  $4x^2 - 11x + 6$

f)  $x^3 - xy$

g)  $2x^2 - 16x + 32$

## 2.10 Exercise

**B** You must be able to recognize which skills must be used to factor a polynomial. When you factor the following polynomials, always check for a common factor first. There are at least two expressions that cannot be factored. Can you find others?

- |                                |                                  |                         |
|--------------------------------|----------------------------------|-------------------------|
| 1. $3a^2 + 6a$                 | 2. $2x - 8xy$                    | 3. $36a^3 - 4a^2$       |
| 4. $25a^4 - 9y^4$              | 5. $x^2 + 7x + 12$               | 6. $3a^2 - 3b^2$        |
| 7. $y^2 - 11y + 28$            | 8. $16x^2 - 8x + 1$              | 9. $a^2 - ab - 56b^2$   |
| 10. $4x^2 - 11x + 6$           | 11. $-1 + 9k^2$                  | 12. $1 + 18y + 32y^2$   |
| 13. $2y^2 - 8y^3$              | 14. $x^2 + 6x + 8$               | 15. $56x^2 + 9x - 2$    |
| 16. $-16 - 9x^2$               | 17. $16 - 28x + 10x^2$           | 18. $m^4 - 16$          |
| 19. $8 - 14y + 5y^2$           | 20. $-(1 - a^4)$                 | 21. $m^4 - 5m^2 - 36$   |
| 22. $6a^2 + 5a + 1$            | 23. $x^4 - y^4$                  | 24. $p^2 - 2pq - 63q^2$ |
| 25. $m^4 + 3m^2 - 4$           | 26. $x^2 - xy$                   | 27. $x^2 + 3xy - x$     |
| 28. $a^2 - 144$                | 29. $3a^2 - 36a + 36$            | 30. $(a + b)^2 - c^2$   |
| 31. $-a^2 - 2ab - b^2$         | 32. $x^3 + 5x^2 - 6$             | 33. $x^4 + 18x^2 + 32$  |
| 34. $m^4 - 9m^2 - 112$         | 35. $x^8 - 1$                    | 36. $2y^2 - 2y - 24$    |
| 37. $2x^2 - 8$                 | 38. $4y^2 + 8y - 60$             | 39. $m^4 - 16$          |
| 40. $2x^2 - 16x + 32$          | 41. $x^3 - xy^2$                 | 42. $x^4 - 5x^2 + 4$    |
| 43. $-48 - 3y^2$               | 44. $x^2y^3z - 2xy^2$            |                         |
| 45. $(x - y)^2 - (x + y)^2$    | 46. $9(a + b)^2 - (a - b)^2$     |                         |
| 47. $(a - b)^2 - 16(a + 2b)^2$ | 48. $25(2x + 1)^2 - (9x - 1)^2$  |                         |
| 49. $4(x - y)^2 - 16(x + y)^2$ | 50. $25(x + 2y)^2 - 9(x - 2y)^2$ |                         |