

### Routine Factorising Practice #3

Fully factorise:

1.  $8x - 12$

2.  $2y^2 - 2y$

3.  $x^2 + 17x + 16$

4.  $x^2 + 17x + 30$

5.  $5g - 15g^2$

6.  $3gh - 12h$

7.  $x^2 + 5x + 6$

8.  $12x - 30y$

9.  $x^2 + 15x + 50$

10.  $2y - 2x$

11.  $x^2 + 16x + 63$

12.  $4x^2 - 4xy$

13.  $15 + x^2 - 8x$

14.  $4jk + 4j$

15.  $x^2 - 10x + 25$

16.  $y^2 - 5y$

17.  $x^2 + x - 30$

18.  $16xy + 12x$

19.  $x^2 - 7x + 10$

20.  $x^2 - x - 56$

### Answers: Routine Factorising Practice #3

Fully factorise:

$$1. \quad 8x - 12 = 4(2x - 3)$$

$$2. \quad 2y^2 - 2y = 2y(y - 1)$$

$$3. \quad x^2 + 17x + 16 = (x + 16)(x + 1) \text{ or } (x + 1)(x + 16)$$

$$4. \quad x^2 + 17x + 30 = (x + 15)(x + 2) \text{ or } (x + 2)(x + 15)$$

$$5. \quad 5g - 15g^2 = 5g(1 - 3g)$$

$$6. \quad 3gh - 12h = 3h(g - 4)$$

$$7. \quad x^2 + 5x + 6 = (x + 2)(x + 3) \text{ or } (x + 3)(x + 2)$$

$$8. \quad 12x - 30y = 6(2x - 5y)$$

$$9. \quad x^2 + 15x + 50 = (x + 5)(x + 10) \text{ or } (x + 10)(x + 5)$$

$$10. \quad 2y - 2x = 2(y - x)$$

$$11. \quad x^2 + 16x + 63 = (x + 7)(x + 9) \text{ or } (x + 9)(x + 7)$$

$$12. \quad 4x^2 - 4xy = 4x(x - y)$$

$$13. \quad 15 + x^2 - 8x = x^2 - 8x + 15 = (x - 3)(x - 5) \text{ or } (x - 5)(x - 3)$$

$$14. \quad 4jk + 4j = 4j(k + 1)$$

$$15. \quad x^2 - 10x + 25 = (x - 5)(x - 5) \text{ or } (x - 5)^2$$

$$16. \quad y^2 - 5y = y(y - 5)$$

$$17. \quad x^2 + x - 30 = (x + 6)(x - 5) \text{ or } (x - 5)(x + 6)$$

$$18. \quad 16xy + 12x = 4x(4y + 3)$$

$$19. \quad x^2 - 7x + 10 = (x - 2)(x - 5) \text{ or } (x - 5)(x - 2)$$

$$20. \quad x^2 - x - 56 = (x + 8)(x - 7) \text{ or } (x - 7)(x + 8)$$

Quadratic factors are the numbers that add to the middle term, and multiply to the end term. Although the factorisations are shown in one step, it is often better to do them in two.