Routine Factorising Practice #1

Fully factorise:

1. $x^2 + 3xy$
2. $16x - 8$
3. $x^2 + 3x + 2$
4. $4x + 4y$
5. $x^2 + 9x + 20$
6. $x^2 + 8x + 12$
7. $4x - 4$
8. $x^2 - 9x + 20$
9. $x^2 + 9x$
10. $3x + 15x^2$
11. $9 - 3x$
12. $x^3 + 5x^2$
13. $x^2 - 3x - 40$
14. $3xy + 12y$
15. $2kx + 10k$
16. $9x + x^2 + 20$
17. $x^3 + 4x^2$
18. $18 + 9x + x^2$
19. $6x - 18y$
20. $x^2 + 2x - 24$

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Answers: Routine Factorising Practice #1

Fully factorise:

1. $x^2 + 3xy$ = $x(x + 3y)$

2. $16x - 8$ = $8(2x - 1)$

3. $x^2 + 3x + 2$ = $(x + 2)(x + 1)$ or $(x + 1)(x + 2)$

4. $4x + 4y$ = $4(x + y)$

5. $x^2 + 9x + 20$ = $(x + 4)(x + 5)$ or $(x + 5)(x + 4)$

6. $x^2 + 8x + 12$ = $(x + 6)(x + 2)$ or $(x + 2)(x + 6)$

7. $4x - 4$ = $4(x - 1)$

8. $x^2 - 9x + 20$ = $(x - 4)(x - 5)$ or $(x - 5)(x - 4)$

9. $x^2 + 9x$ = $x(x + 9)$

10. $3x + 15x^2$ = $3x(1 + 5x)$ or $3x(5x + 1)$

11. $9 - 3x$ = $3(3 - x)$

12. $x^3 + 5x^2$ = $x^2(x + 5)$

13. $x^2 - 3x - 40$ = $(x + 5)(x - 8)$ or $(x - 8)(x + 5)$

14. $3xy + 12y$ = $3y(x + 4)$

15. $2kx + 10k$ = $2k(x + 5)$

16. $9x + x^2 + 20$ = $x^2 + 9x + 20$ = $(x + 4)(x + 5)$ or $(x + 5)(x + 4)$

17. $x^3 + 4x^2$ = $x^2(x + 4)$

18. $18 + 9x + x^2$ = $x^2 + 9x + 18$ = $(x + 3)(x + 6)$ or $(x + 6)(x + 3)$

19. $6x - 18y$ = $6(x - 3y)$

20. $x^2 + 2x - 24$ = $(x - 4)(x + 6)$ or $(x + 6)(x - 4)$

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.

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