

Factoring Review

1.1 E 0+11 L 1.8 →
 a. $x^2 + 6x + 8$ 2.4 →

$$\left(\frac{x+2}{\text{nm}} \right) \left(\frac{x+4}{\text{nm}} \right)$$

$\begin{matrix} 0 & & 2x & & 0 \\ & \text{I} & & \text{I} & \\ & & 4x & & \end{matrix}$

b. $x^2 + 9x + 20$ 1.20
 2.10
 4.5 →
 $(x+4)(x+5)$

c. $x^2 + 14x - 72$ 1.72
 2.36
 3.24
 $\boxed{4.18} \rightarrow -4+18$
 6.12
 8.9
 $(x-4)(x+18)$

d. $x^2 - 14x + 40$ 1.40
 2.20
 $\boxed{4.10}$
 5.8
 $(x-4)(x-10)$

e. $\downarrow -x^2 + 13x - 12$
 $-1(x^2 - 13x + 12) \rightarrow \boxed{1.12} -1-12 = -13$
 2.6
 3.4
 $-1(x-12)(x-1)$

$a \neq 1$

a. $2x^2 + 11x + 12$

Handwritten annotations: 1·2 above 2, 2·6 and 3·4 to the right of 12.

$(2x + 3)(x + 4)$

Handwritten annotations: A bracket under 3x and 4x with 8x below it. A bracket under 11x below that.

Product ac

a·c
2·12

$\boxed{24}$

1·24
2·12

$\boxed{3 \cdot 8}$
4·6

$2x^2 + 3x + 8x + 12$
 $x(2x + 3) + 4(2x + 3)$
 $(x + 4)(2x + 3)$

b. $4x^2 - 4x - 3$

Handwritten annotations: 1·4 and 2·2 above 4, 2·2 and 1·3 to the right of -3.

$(2x + 1)(2x - 3)$

Handwritten annotations: A bracket under 2x and 1x with 1x below it.

Product: $4(-3) = -12$

$4x^2 + 2x - 6x - 3$

$\boxed{2 \cdot 6}$ 2, -6
3·4

$2x(2x + 1) - 3(2x + 1)$

$(2x - 3)(2x + 1)$

c. $28x^2 + \underline{13}x - 6$

$\begin{matrix} 1 \cdot 28 \\ 2 \cdot 14 \\ 4 \cdot 7 \end{matrix}$
 $\begin{matrix} 1 \cdot 6 \\ 2 \cdot 3 \end{matrix}$

$$(4x+3)(7x-2)$$

$\underbrace{\hspace{10em}}_{21x}$
 $-8x$

$$\begin{array}{r} 4 \\ \cdot \\ 28 \\ \hline 6 \\ 168 \end{array}$$

$$9x^2 - 16$$

- 1. 168
- 2. 84
- 3. 56
- 4. 42
- 6. 28
- 7. 24
- 8. 21
- 12. 14

$$d. \quad \underline{9x^2} - \underline{16} \quad a^2 - b^2 = (a+b)(a-b)$$

$$(3x+4)(3x-4)$$

$$18x^2 - 32 = 2(9x^2 - 16)$$