

Algebraic Skills: Solve, Expand & Factorise

Practice Worksheet (Foundation Tier)

I DO

(a) Solve $5x - 7 = 38$

(b) Expand $3(4h - 9)$

(c) Factorise $16m + 48$

WE DO

(a) Solve $4y + 5 = 29$

(b) Expand $5(2k - 7)$

(c) Factorise $12p + 30$



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YOU DO 1

(a) Solve $6w - 11 = 31$

(b) Expand $7(3v + 4)$

(c) Factorise $15n - 35$

YOU DO 2

(a) Solve $3a + 14 = 5$

(b) Expand $8(5c - 2)$

(c) Factorise $24q + 36$



CHALLENGE

(a) Solve $\frac{x}{4} - 3 = 5$

(b) Expand and simplify $4(2p - 3) + 3(p + 5)$

(c) Factorise fully $18x^2 + 27x$

PRACTICE PERFECT

Work out the following algebraic problems. Show your working.

1. Solve $7x - 4 = 31$

2. Expand $6(3y - 5)$

3. Factorise $20a + 15$

4. Solve $8b + 9 = 41$

5. Expand $9(2m + 7)$

6. Factorise $14p - 35$



ANSWERS & WORKED SOLUTIONS

I Do

(a) $5x = 38 + 7 \rightarrow 5x = 45 \rightarrow x = 9$

(b) $3 \times 4h - 3 \times 9 = 12h - 27$

(c) The Highest Common Factor (HCF) of 16 and 48 is 16.

$$16(m + 3)$$

Answer: $16(m + 3)$

We Do

(a) $4y = 29 - 5 \rightarrow 4y = 24 \rightarrow y = 6$

(b) $5 \times 2k - 5 \times 7 = 10k - 35$

(c) The HCF of 12 and 30 is 6.

$$6(2p + 5)$$

Answer: $6(2p + 5)$

You Do 1

(a) $6w = 31 + 11 \rightarrow 6w = 42 \rightarrow w = 7$

(b) $7 \times 3v + 7 \times 4 = 21v + 28$

(c) The HCF of 15 and 35 is 5.

Answer: $5(3n - 7)$

You Do 2

(a) $3a = 5 - 14 \rightarrow 3a = -9 \rightarrow a = -3$

(b) $8 \times 5c - 8 \times 2 = 40c - 16$

(c) The HCF of 24 and 36 is 12.

Answer: $12(2q + 3)$

Challenge

(a) $\frac{x}{4} = 5 + 3 \rightarrow \frac{x}{4} = 8 \rightarrow x = 8 \times 4 \rightarrow x = 32$

(b) Expand both brackets: $(8p - 12) + (3p + 15)$

Simplify by collecting like terms: $8p + 3p - 12 + 15 = 11p + 3$

(c) The HCF of 18 and 27 is 9. The HCF of x^2 and x is x . Overall HCF is $9x$.

Answer: $9x(2x + 3)$



Practice Perfect

1. $7x = 35 \rightarrow x = 5$

2. $18y - 30$

3. HCF is 5. $\rightarrow 5(4a + 3)$

4. $8b = 32 \rightarrow b = 4$

5. $18m + 63$

6. HCF is 7. $\rightarrow 7(2p - 5)$



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