Year 9 Algebraic Expressions – Developing

ANSWER KEY HappyKids.fit

Answers and worked solutions · 10 questions

A. Use algebra

1. $x^2 + 20x + 100$ cm^2

Side with the border = x + 5 + 5 = x + 10

Area = $(x + 10)^2$

= $x^2 + 20x + 100$ cm^2

2. $x^2 + 6x + 9$ m^2

Area = $(x + 3)^2$

= $(x + 3)(x + 3)$

= $x^2 + 6x + 9$ m^2

3. $a/6$

Factorise both: a(a + 7) and 6(a + 7)

Cancel (a + 7): a/6

4. $y/2$

Factorise both: y(y + 6) and 2(y + 6)

Cancel (y + 6): y/2

5. $2\sqrt[3]{n}$

Start with n and follow the steps in order

$2\sqrt[3]{n}$

6. $n^2 + 4$

Start with n and follow the steps in order

$n^2 + 4$

7. $t^2 - 14t + 49$

Write it as (t – 7)(t – 7). Multiply every term by every term

$t^2 - 7t - 7t + 49$

Collect the t terms: $t^2 - 14t + 49$

8. $2y + 1$

Factorise the numerator: 2(2y + 1)

Cancel the common factor 2: 2y + 1

9. Expand both parts and subtract: the result is 6x + 48.

$(x + 8)(x + 3) = x^2 + 11x + 24$

$(x + 8)(x - 3) = x^2 + 5x - 24$

Subtract: 6x + 48

10. Mistake: the number 3 must also be raised to the power 2. Correct: $9x^8$

Error: the number 3 must also be raised to the power 2

$3^2 = 9$

= $9x^8$