

Delta 2

Unit 2 Review (Non-Calculator)

Working with Powers

How well did you do:

Working with Powers	Score = $\frac{\quad}{43}$	
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Topics/skills which need to be revisited:	Questions from the review:	Further Practice from Delta 2:
• Simplify expressions by collecting like terms • Understand the difference between an equation and an identity	• 1 • 5	• P35 Q3 • P37 Q3
• Using laws of indices to simplify basic algebraic expressions • Using laws of indices to simplify more complicated algebraic expressions which involve numbers and letters	• 3,8 • 12	• P36 Q1,2,3 • P36 Q4,5
• Expand brackets that have a number or letter outside the bracket • Expand brackets that have a number or letter outside the bracket, and simplify by collecting like terms • Factorise expressions, where the HCF is an algebraic term	• 2 • 4 • 6	• P37 Q1 • P37 Q2 • P37 Q5
• Write expressions for area and volume • Solve equations • Form and solve equations arising from problem solving question • Substitute numbers into expressions/formulae, adhering to the rules of BIDMAS	• 11a • 9 • 11b • 7,10	• P38 Q2a,b • P38 Q1 • P38 Q2c,d • P35 Q5

1 Simplify

a $6x + 4 - 2x - 7$

.....

b $2y^2 + 3y + y^2 + 6$

.....

(4 marks)

2 Expand these brackets.

a $4(2m - 3)$

.....

b $p(3p + 5)$

.....

(4 marks)

3 Simplify

a $t^2 \times t$

.....

b $\frac{m^4}{m}$

.....

(2 marks)

4 Expand and simplify fully

a $4k^2 + 2k(3 - k)$

.....

b $4(x + 2y) + 3(y - x)$

.....

(4 marks)

5 a Which one of these equations should have $\equiv$ instead of $=$?

A $5v - 7 = 4 + 2v - 3$ **B** $r(r + 2) = r^2 + 2r$

.....

b What is the name of this symbol $\equiv$ and what does it mean ?

.....
.....
.....

(3 marks)

6 Fully factorise these expressions.

a $2d^2 - 7d$

b $pq + pq^2 - p^2q$

.....
.....

(4 marks)

7 Substitute $x = -5$ into these terms.

a x^2

b $2x$

c $2x^2$

d $(2x)^2$

.....
.....
.....
.....

(4 marks)

8 Simplify

a $n^4 \times n^3$

.....

b $c^{10} \div c^3$

.....

(2 marks)

9 Solve the equation.

$$3(2x - 1) - 4(x + 2) = 0$$

.....

(3 marks)

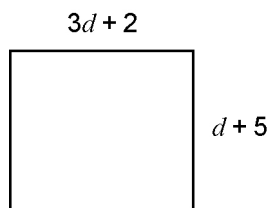
10 The formula $s = \frac{v^2 - u^2}{2a}$ can be used to find the height of a ball (s metres) which has been projected into the air.

Find s when $u = 21$, $v = 0$ and $a = -9.8$

.....m

(3 marks)

11 The diagram shows a rectangle with length $(3d + 2)$ cm and width $(d + 5)$ cm.



a Write an expression for the perimeter of the rectangle.

.....

b Given that the perimeter is 30 cm, make and solve an equation to find d .

.....

(4 marks)

12 Simplify

a $(5a^3)^2$

.....

b $\frac{35b^{10}}{7b^2}$

.....

c $\left(\frac{c^3}{3}\right)^3$

.....

(6 marks)

[End of Review]