




Check Your Understanding – Fractional Exponents, Area and Perimeter Problems, Finding Numerical Values

The table below identifies the key concepts from this unit.

1. Check your understanding by completing these questions.
2. Check your answers in the key provided.
3. In the table below, highlight the questions you got correct.
4. Ask peers/Dr. James about concepts where you can improve.

Key Concepts	 Mild	 Medium	 Spicy
Fractional Exponents		1	2
Area Problems	3	4	5
Perimeter Problems	6	7	8
Finding Numerical Values	9	10	11

1a) Write the following using radical notation

$$5^{\frac{1}{2}} =$$

1b) Write the following using exponents

$$\sqrt{7} =$$

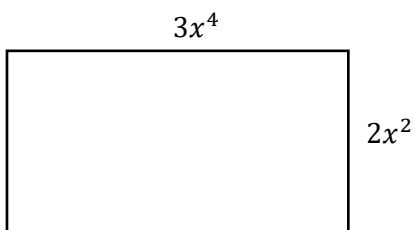
2a) Write the following using radical notation

$$x^{\frac{3}{7}} =$$

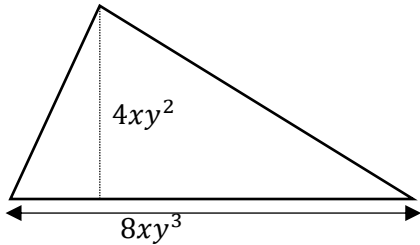
2b) Write the following using exponents

$$\sqrt[4]{x^5} =$$

3) Find the area of the rectangle below

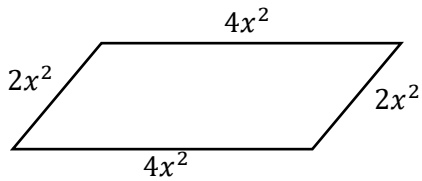


4) Find the area of the triangle below

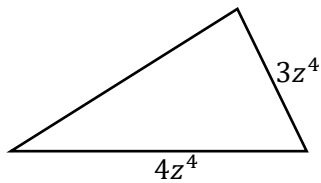


5) The **area** of a rectangle is $24x^4z^8$. The **length** of the rectangle is $6x^2z^7$. Determine the **width** of the rectangle.

6) Determine the perimeter of the parallelogram below



7) The perimeter of the triangle below is $12z^4$. Determine the length of the missing side.



8) The **perimeter** of a rectangle is $30y$. The **length** of the rectangle is $13y$. Determine the **width** of the rectangle.

9a) Determine the numerical value of

$$3x^2y^5$$

when $x = 3$ and $y = 2$

9b) Determine the numerical value of

$$-4a^5b^2$$

when $a = -2$ and $b = 4$

10a) Determine the numerical value of

$$(4f^3w^2a)^2$$

when $f = 4$, $w = -3$, and $a = 5$

10b) Determine the numerical value of

$$\frac{16a^4b^7c^9}{8a^2b^9c^9}$$

when $a = 5$, $b = 7$, and $c = 11$

11a) Determine the numerical value of

$$\frac{x^{-4}y^2z^{-8}}{x^2z^{-9}} =$$

when $x = 8$, $y = 3$, and $z = 1$

11b) Determine the numerical value of

$$\frac{(3a^3b^9c^0)^{-4}(a^{16}b^2)}{c^{-2}} =$$

when $a = 5$, $b = 2$, and $c = 7$

Answers

1a) $\sqrt{5}$ or $\sqrt[2]{5}$

1b) $7^{\frac{1}{2}}$

2a) $\sqrt[7]{x^3}$

2b) $x^{\frac{5}{4}}$

3) $6x^6$

4) $16x^2y^5$

5) $4x^2z$

6) $12x^2$

7) $5z^4$

8) $2y$

9a) 864

9b) 2048

10a) 132 710 400

10b) $\frac{50}{49}$ or 1.02

11a) 0.000034

11b) 0.000000022