

WJEC MATHEMATICS

HIGHER
3 TIER TOPICS

DIMENSIONAL ANALYSIS

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June 2017 – Maths – P1

6. In the following formulae, each measurement of length is represented by a letter.

Consider the dimensions implied by the formulae.

Write down, for each case, whether the formula could be for a length, an area, a volume or none of these.

The first one has been done for you.

[3]

<u>Formula</u>	<u>Formula could be for</u>
$d^3 - 3 \cdot 14r^2h$ volume
$d^2 + hw$
$d + w + h$
$2\pi r - \pi r^2$
$(d + h)w$
$d^3 + dwh$

Spec 1 – Numeracy – P1

(b) Rhodri uses formulae to calculate the perimeters and areas of the logos.

In the formulae, a , b , c and d are all lengths.

(i) Which **one** of the following formulae might be used to calculate the perimeter of the logo?

Circle your answer.

[1]

$$\text{Perimeter} = a(b + 2c + d)$$

$$\text{Perimeter} = a - 5b + 2c - d$$

$$\text{Perimeter} = ab + 2c + d$$

$$\text{Perimeter} = a + b + 2c + d^2$$

(ii) Which **one** of the following formulae might be used to calculate the area of the logo?

Circle your answer.

[1]

$$\text{Area} = ad(b + 2c^2)$$

$$\text{Area} = a(5b + 2c + d^2)$$

$$\text{Area} = 3(a + b + 2c) + d$$

$$\text{Area} = a(5b + 2c - d)$$