

1 Circle the expression equivalent to  $(2x)^4$

[1 mark]

$2x^4$

$6x^4$

$8x^4$

$16x^4$



2 Simplify  $(a^5)^3$

Circle your answer.

[1 mark]

$8a$

$15a$

$a^8$

$a^{15}$

1

3

Work out the value of  $\left(\frac{5}{7}\right)^{-2}$

Give your answer as a mixed number.

[3 marks]

$$\left(\frac{5}{7}\right)^{-2} = \left(\frac{7}{5}\right)^2$$

$$= \frac{49}{25} = 1 \frac{24}{25} \quad (3)$$

Answer  $1 \frac{24}{25}$

4

Simplify  $w^1 \times w^0 = w^1$ 

Circle your answer.

**[1 mark]**

1

0

wi $w^2$

5 The equation of a curve is  $y = 16^x$

$$16^2 = 256$$

5 (a) Circle the point that lies on the curve.

[1 mark]

(2, 32)

(32, 2)

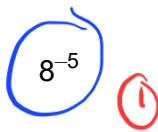
(2, 256)

(256, 2)



6

Circle the reciprocal of  $8^5$ **[1 mark]**

 $8^{-5}$

$5^{-8}$

$-8^5$

$5^8$

7

Write  $(3^6 \times 3^5) : 3^7$  in the form  $n : 1$  where  $n$  is an integer.

[3 marks]

$$3^{6+5} : 3^7$$

$$= 3^{11} : 3^7$$

$$3^4 : 1$$

$$= 81 : 1$$

Answer 81 : 1

8 (a) Work out the value of  $\left(\frac{5}{4}\right)^{-2}$

[2 marks]

$$\left(\frac{5}{4}\right)^{-2} = \left(\frac{4}{5}\right)^2 = \frac{16}{25} \quad (1)$$

Answer  $\frac{16}{25}$

8 (b) Work out the value of  $\left(\frac{9}{100}\right)^{\frac{3}{2}}$

[2 marks]

$$\left[\sqrt{\frac{9}{100}}\right]^3 = \left(\frac{3}{10}\right)^3 \quad (1)$$
$$= \frac{27}{1000} \quad (1)$$

Answer  $\frac{27}{1000}$