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

[1 mark]

$2x^4$ $6x^4$ $8x^4$ $16x^4$ (1)

2 Simplify $\left(a^5\right)^3$

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]

$\left[\frac{5}{7}\right]^{-2} = \left[\frac{7}{5}\right]^{2}$

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

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

4 Simplify $w^1 \times w^0$: w^1

Circle your answer.

[1 mark]

1 0 w 1 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)

1

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]

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

$= 3^{11} : 3^7$ (1)

$3^4 : 1$ (1)

$= 81 : 1$ (1)

Answer 81 : 1

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

[2 marks]

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

Answer $\frac{16}{25}$

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

[2 marks]

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

$= \frac{27}{1000}$ (1)

Answer $\frac{27}{1000}$