Section 2: Indices

Section test

Do not use a calculator in this test.

1) Write $3^4 \times 3^2$ in the form 3^a.

2) Write $5^{10} \div 5^2$ in the form 5^k.

3) Write $(2^4)^3$ in the form 2^b.

4) The expression $3a^2b \times (2ab^{-2})^3 \div 4ab^2$ can be simplified to give the expression

(a) $\dfrac{6a^4}{b^7}$ (b) $\dfrac{6a^4}{b^{5/2}}$

(c) $\dfrac{20a^4}{b^7}$ (d) $\dfrac{20a^4}{b^{5/2}}$

5) $3^{-4} =$

(a) $\dfrac{1}{81}$ (b) $-\dfrac{1}{81}$

(c) $\sqrt[4]{3}$ (d) $-\sqrt[4]{3}$

6) $16^{-1/4} =$

(a) $-\dfrac{1}{2}$ (b) $\dfrac{1}{2}$

(c) 2 (d) -2

7) $27^{2/3} =$

(a) $\dfrac{1}{18}$ (b) 18

(c) $\dfrac{1}{9}$ (d) 9

8) Evaluate $\left(\dfrac{4}{25}\right)^{-3/2}$

9) Write $8^3 \times 6^{1/2} \div 32^{3/2}$ in the form $a\sqrt{b}$.

10) Simplify $\dfrac{9^{1/3} \times 12^{-1/2}}{3^{1/6} \times 2^0}$

(a) $\dfrac{1}{4}$ (b) $\dfrac{1}{2}$

(c) 2 (d) $\sqrt{2}$