

National 5 Homework

Numerical Skills

Using Indices

1. Write down 6 laws of indices.
2. Simplify $2x^3 \times 5x^{-2} \times 3x^4$
3. Express $4p^{-3} \times 5p$ with a positive index.
4. Expand and simplify

$$a^{3/2}(2a^{1/2} + 5a^{-3/2}).$$

5. Evaluate $64^{2/3}$
6. Simplify $3p^{-3}(2p^3 - 5p^4)$
7. Express $(a^2b^3)^3$ without brackets.
8. Show clearly that $32^{-3/5} + 2^{-3} = \frac{1}{4}$
9. Simplify

$$\frac{4a^3 \times 5a^5}{2a^4}$$

10. Simplify

$$\frac{6p^{-2} \times 4p^5}{8p^3}$$

11. Simplify and express with a positive index.

$$2a^{-4} \times 6a^5 \times \frac{1}{2}a^{-3}$$

12. Evaluate $81^{-3/4}$.