ILLAWARRA TUTORING

This worksheet covers the topic of zero and negative indices. Students will learn how to simplify and manipulate algebraic expressions that involve a zero exponent and negative exponents.

Easy Questions

1. Write 5^0 in its simplest form.
2. Write 3^{-1} as a common fraction.
3. Simplify x^0.
4. Write 2^{-1} in the form of a fraction.
5. Express a^{-3} using positive indices.

Intermediate Questions

6. Simplify $a^0 \cdot a^{-3}$.
7. Simplify $3^{-2} \cdot 3^5$.
8. Simplify $\dfrac{x^{-1}}{x^{-4}}$.
9. Simplify $2^{-3} \cdot 2^3$.
10. Simplify $(2a)^0 \cdot a^{-1}$.
11. Simplify $(x^{-2} \cdot y^0) \cdot (x^3 \cdot y^{-1})$.
12. Simplify $(7m)^0 \cdot (7m)^{-1}$.
13. Simplify $\dfrac{a^{-3}}{a^{-1}}$.

14. Simplify $2^{-1} \cdot 8^{-1}$.

15. Write m^{-2} in its equivalent fractional form.

16. Write a^{-4} with only positive indices.

17. Simplify $\left(3^{-2}\right)^{-1}$.

18. Simplify $\dfrac{x^{-1}}{x^{-3}}$.

19. Simplify $5^{-2} \cdot 5^{4}$.

20. Simplify $x^{0} \cdot x^{-3}$.

Hard Questions

21. Simplify $\dfrac{a^{-3}b^{0} \cdot a^{5}b^{-2}}{a^{2}b^{-4}}$.

22. Simplify $\dfrac{2^{-3} \cdot 3^{0} \cdot 2^{5}}{2^{-2}}$.

23. Simplify $\left(\dfrac{x^{-2}y^{3}}{x^{0}y^{-1}}\right) \cdot \left(x^{4}y^{-2}\right)$.

24. Simplify $\dfrac{4a^{-2}b^{0} \cdot 2a^{5}}{8a^{2}}$.

25. Simplify $\left(\dfrac{2^{-1}}{2^{-3}}\right)^{-1}$.

26. Simplify $\left(\dfrac{x^{-3}y^{0}}{x^{-1}y^{-2}}\right) \cdot \left(x^{2}y^{-1}\right)$.

27. Write $\left(a^{0}b^{-3}\right)^{-1}$ in its simplest form using positive indices.

28. Simplify $\dfrac{(3a^{-2}) \cdot (2a^{4}b^{0})}{6a^{2}}$.

29. Simplify $\left(\dfrac{x^{-1}y^{-1}}{x^{-3}y^{0}}\right)^{-2}$.

30. Simplify $\left(\dfrac{2^{-2} \cdot 3^{-1}}{2^{-3} \cdot 3^{0}}\right)^{-1}$.