Year 9 · Number: Powers, Fractions & Proportions

Name: _____ Date: _____

Hi! This sheet mixes together scientific notation, order of operations, fractions and percentages, plus some ratio work. Take your time, show your steps, and check your answers look reasonable.

Warm-up

1. Write 45 000 in scientific notation.

2. Work out 2^5 and 2^8.

3. Write 3^{-2} as a unit fraction.

4. Simplify the fraction 18/24.

Practice

5. Evaluate $5 + 3 \times (8 - 6)^2$ using the correct order of operations (GEMA).

6. Between which two whole numbers does $\sqrt{55}$ lie, and which is it closer to?

7. Calculate $\frac{2}{3} \div \frac{3}{4}$. Give your answer in simplest form.

8. A pair of gumboots at a Warehouse store in Avondale costs $60. They are marked down by 25%. What is the sale price?

9. Aroha and Mikaere share $84 in the ratio 3 : 4. How much does each get?

10. A car uses 6 litres of petrol to travel 75 km. At this rate, how far can it travel on 20 litres?

Challenge

11. 20% of a number is 30. What is the number, and what is 35% of it?

12. Evaluate $(-3)^2 - 3^2 + (-2)^3$, then write the result as a fraction of 20 in simplest form.