Year 6 · Number: Big Numbers, Squares & Negatives

Name: _____ Date: _____

Hi! This sheet gives you a good workout with place value, rounding, factors, square and cube numbers, and negative numbers. Take your time and show your thinking, a number line can really help!

Warm-up

1. Round 47,382 to the nearest thousand.

2. What is 9^2 (nine squared)?

3. Start at −3 and count backwards in 2s. Write the next three numbers.

4. Write '60,000 + 4,000 + 200 + 7' as a single numeral.

Practice

5. Order these numbers from smallest to largest: 8,540; 8,405; 8,054; 8,450.

6. Find all the factor pairs of 36.

7. Round 3.47 to the nearest tenth, and then round 3.47 to the nearest whole number.

8. One winter morning in Ohakune the temperature was −4°C at 6am. By midday it had risen 9°C. What was the temperature at midday?

9. Mere has $120 in her bank account. She pays a $185 power bill using the account. What will her balance be?

10. What is 4^3 (four cubed)? Show what 'cubed' means.

Challenge

11. Round 6,748,205 to the nearest million, and then to the nearest hundred thousand.

12. Find a number that is both a square number and a cube number, and is between 2 and 100. Show why it works.

Answer key (for parents and tutors)

1. Round 47,382 to the nearest thousand.
   Look at the hundreds digit to decide. 47,382 has 3 hundreds. Because 3 is less than 5, we round down. The answer is 47,000.

2. What is 9^2 (nine squared)?
   Squared means multiply the number by itself: 9 × 9 = 81.

3. Start at −3 and count backwards in 2s. Write the next three numbers.
   Counting backwards means going further left on the number line, so the numbers get smaller: −3, then −5, then −7, then −9. Answer: −5, −7, −9.

4. Write '60,000 + 4,000 + 200 + 7' as a single numeral.
   Add the place values together: 60,000 + 4,000 + 200 + 0 tens + 7 = 64,207.

5. Order these numbers from smallest to largest: 8,540; 8,405; 8,054; 8,450.
   All start with 8 thousands, so compare the hundreds. 8,054 has 0 hundreds (smallest). Then 8,405 and 8,450 both have 4 hundreds, compare tens: 8,405 (0 tens) before 8,450 (5 tens). Largest is 8,540 (5 hundreds). Order: 8,054; 8,405; 8,450; 8,540.

6. Find all the factor pairs of 36.
   Look for two whole numbers that multiply to 36: 1 × 36, 2 × 18, 3 × 12, 4 × 9, 6 × 6. Those are all five factor pairs.

7. Round 3.47 to the nearest tenth, and then round 3.47 to the nearest whole number.
   Nearest tenth: look at the hundredths digit (7). Since 7 is 5 or more, round the tenths up from 4 to 5, giving 3.5. Nearest whole: look at the tenths digit (4). Since 4 is less than 5, round down to 3.

8. One winter morning in Ohakune the temperature was −4°C at 6am. By midday it had risen 9°C. What was the temperature at midday?
   Start at −4 on a number line and move up (right) 9 steps. From −4 to 0 is 4 steps, leaving 5 more steps: 0 + 5 = 5. The temperature at midday was 5°C.

9. Mere has $120 in her bank account. She pays a $185 power bill using the account. What will her balance be?
   She is spending more than she has, so the balance goes below zero. 120 − 185 = −65. Her balance will be −$65, meaning she owes the bank $65.

10. What is 4^3 (four cubed)? Show what 'cubed' means.
    Cubed means multiplying the number by itself twice: 4 × 4 × 4. First 4 × 4 = 16, then 16 × 4 = 64. So $4^3 = 64$.

11. Round 6,748,205 to the nearest million, and then to the nearest hundred thousand.
    Nearest million: look at the hundred-thousands digit (7). Since 7 is 5 or more, round the millions up from 6 to 7: 7,000,000. Nearest hundred thousand: look at the ten-thousands digit (4). Since 4 is less than 5, keep the hundred thousands the same: 6,700,000.

12. Find a number that is both a square number and a cube number, and is between 2 and 100. Show why it works.
    The answer is 64. It is a square number because 8 × 8 = 64 (so $8^2 = 64$). It is also a cube number because 4 × 4 × 4 = 64 (so $4^3 = 64$). So 64 is both a square and a cube number.