Year 8 Integers, Powers and Roots – Developing

ANSWER KEY HappyKids.fit

Answers and worked solutions · 10 questions

A. Use powers and roots

1. **7, −10, 0, 12**

Natural numbers: 1, 2, 3, ... (positive whole numbers). Integers: whole numbers, including 0 and negatives
Rational numbers: any number that can be written as a fraction, so every integer is rational

2. **none**

Natural numbers: 1, 2, 3, ... (positive whole numbers). Integers: whole numbers, including 0 and negatives
Rational numbers: any number that can be written as a fraction, so every integer is rational

3. **n = 9**

Indices add when multiplying: 3 + n = 12
n = 9

4. **n = 8**

Indices add when multiplying: 3 + n = 11
n = 8

5. **−11 °C**

Total fall: 3 × 2 = 6 °C
−5 − 6 = −11 °C

6. **64 m**

Side = √256 = 16 m
Perimeter = 4 × 16 = 64 m

7. **−32 °C; 16 degrees colder**

−16 × 2 = −32 °C
−16 − (−32) = 16 degrees

8. **4**

Brackets first (including the part under a root sign), then indices and roots
Then × and ÷, then + and −
= 4

9. **4^6**

Same base, so add the indices: 4 + 2 = 6
= 4^6

10. **$(-8)^2 = (-8) \times (-8) = 64$; a negative times a negative is positive.**

Error: the sign was kept negative
(−8) × (−8)
= 64