Integer operations: 10 practice questions

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Name: _____ Date: _____

Attempt all questions and show your working. Suggested time: 15 to 20 minutes.

Section A: Consolidating (Questions 1-4)

Question 1

Calculate:

(a) -7 + 12

(b) -4 - 9

(c) 6 - (-5)

(d) -8 + (-3)

Question 2

Calculate:

(a) -6 × 4

(b) -5 × (-7)

(c) 36 ÷ (-9)

(d) -48 ÷ (-6)

Question 3

At 6 am the temperature at a ski resort was -3°C. By noon it had risen by 8°C. What was the temperature at noon?

Question 4

Write these integers in order from smallest to largest:

-5, quad 3, quad -12, quad 0, quad -1

Section B: Standard (Questions 5-10)

Question 5

Use the correct order of operations to evaluate:

(a) -3 + 4 × (-2)

(b) $(-3 + 4) \times (-2)$

(c) $20 \div (-4) - 6$

(d) $(-2)^3$

Question 6

(a) Evaluate $(-5)^2$.

(b) Evaluate -5^2.

(c) Explain why the two answers are different.

Question 7

Calculate, giving each answer as a fraction in simplest form.

(a) $-\frac{1}{2} + \frac{3}{4}$

(b) $-\frac{2}{3} - \frac{1}{6}$

(c) $-\frac{3}{5} \times \frac{10}{9}$

(d) $-\frac{3}{4} \div (-\frac{1}{2})$

Question 8

Calculate:

(a) $-2.5 + 4.1$

(b) -1.2×3

(c) $-0.6 \times (-0.5)$

(d) $-7.2 \div 0.9$

Question 9

Lena's bank account is overdrawn, with a balance of negative $45 (she owes the bank $45). She deposits $120, then pays a $38 phone bill from the account. What is her balance now?

Question 10

Use a mental strategy to calculate each product. Show your strategy.

(a) $25 \times (-36)$

(b) -17×99

Integer operations: answers

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Question 1

Answer: (a) 5 (b) -13 (c) 11 (d) -11

Question 2

Answer: (a) -24 (b) 35 (c) -4 (d) 8

Question 3

Answer: 5°C (-3 + 8)

Question 4

Answer: -12, -5, -1, 0, 3

Question 5

Answer: (a) -11 (-3 - 8) (b) -2 (c) -11 (-5 - 6) (d) -8

Question 6

Answer: (a) 25 (b) -25 (c) In $(-5)^2$ the whole of -5 is squared: $(-5) \times (-5) = 25$. In -5^2 only the 5 is squared and the negative is applied after: $-(5 \times 5) = -25$.

Question 7

Answer: (a) ¼ (b) -⅚ (c) -⅔ (d) 3/2 (or 1½)

Question 8

Answer: (a) 1.6 (b) -3.6 (c) 0.3 (d) -8

Question 9

Answer: $37 (-45 + 120 - 38 = 37)

Question 10

Answer: (a) -900 (for example $25 \times 4 = 100$, so $25 \times 36 = 900$, and the sign is negative) (b) -1683 (for example $-17 \times 100 + 17 = -1700 + 17$)