Integers and rational numbers - topic test

Name: _____ Date: _____

15 questions | 29 marks | 45 minutes

A progressively demanding test of signed calculations, number classification and accuracy.

No calculator needed.

1. Write -3, 2, -7 and 0 in increasing order. [1 mark]

2. Calculate $-8 + 13$. [1 mark]

3. Calculate $7 - (-5)$. [1 mark]

4. Calculate $(-6)(-7)$. [1 mark]

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5. Calculate $-54 \div 6$. [1 mark]

6. Calculate $-\frac{3}{4} + \frac{1}{6}$. [2 marks]

7. Calculate $-\frac{5}{8} \div (-\frac{15}{16})$. [2 marks]

8. Calculate $-2.6 + 0.85$. [2 marks]

9. Calculate $20 - 3(2 + 4)$. [2 marks]

10. Work out each expression. [2 marks]

(a) -4^2 [1 mark]

(b) $(-4)^2$ [1 mark]

11. Write $\frac{7}{12}$ as a recurring decimal. State whether it terminates. [2 marks]

12. Classify each value as rational or irrational. Give a reason. [3 marks]

(a) $\sqrt{64}$ [1 mark]

(b) $\sqrt{10}$ [1 mark]

(c) $0.\overline{27}$ [1 mark]

13. Given $6.7^2 = 44.89$ and $6.8^2 = 46.24$, place $\sqrt{45}$ between consecutive tenths. [2 marks]

14. A circular lid has diameter 9 cm. Give its exact circumference. Then estimate it using pi = 3.14. [3 marks]

15. Seven students share 9 m of rope equally. Give each share exactly, then rounded to two decimal places. Explain why seven pieces of the rounded length may not total exactly 9 m. [4 marks]