Topic Check In - 1.01 Calculations with integers

Do not use a calculator.

Calculate the following, showing all your working.

1. 78 + 29

2. 304 – 78

3. 34 × 69

4. 204 ÷ 12

5. 7 – 9 – 21 + 15

6. Mary writes the following in her exercise book.

    $$^-8 \times {}^-3 = {}^-24$$

    Her answer is incorrect. Explain how you know that she has made a mistake.

7. Explain why 240 ÷ 20 is the same as 24 ÷ 2.

8. Steven is attempting the following calculation.

    $$1148 \div 14$$

    His incorrect solution is shown below.

Line 1	532
Line 2	14⟌1148
Line 3	14 × 50 = 700
Line 4	14 × 30 = 420
Line 5	14 × 2 = 28

    What is the correct answer? Explain the mistake Steven has made.

9. Amanda is using these numbers to make a new number.

1	-2	4	-8

    *   She can only use the + and – operations.
    *   She cannot use any number more than once.
    *   She cannot use multiplication, division or powers.
    *   She cannot put numbers together, e.g. she can't use 48.

    What is the largest number that she can make?

10. The £2 coin has a mass of 12 g.
    What is the value of 3 kg of £2 coins?
    Remember: 1 kg = 1000 g

Extension

Given that 78 × 30 = 2340, explain how you could easily find 78 × 29.

State some other calculations that you could determine easily from the original statement.

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Answers

1. 107

2. 226

3. 2346

4. 17

5. ⁻8

6. Negative multiplied by negative gives positive

7. Because the two divisions form equivalent fractions oe

8. 82. He should have added 50 and 30

9. 15 = 1 – ⁻2 + 4 – ⁻8

10. 3000 ÷ 12 = 250
    250 × 2 = £500

Extension

78 × 29 = 78 × (30 – 1) = 78 × 30 – 78 × 1 = 2340 – 78 = 2262

Other calculations that could be solved readily include 78 × 31, 78 × 60, 7.8 × 2.9, etc

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Assessment Objective	Qu.	Topic	R	A	G
AO1	1	Add whole numbers (integers)			
AO1	2	Subtract integers			
AO1	3	Multiply integers			
AO1	4	Divide integers			
AO1	5	Add directed numbers			
AO2	6	Explain rules for multiplication of directed numbers			
AO2	7	Explain rules of division			
AO2	8	Use multiplication facts to solve a division problem			
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