Unit 4 · Simplification

HARDER PRACTICE QUESTIONS

Full marks 33

Write your answers on separate paper. Show your working, one step a line, and say which operation you do at each step. No brackets are needed anywhere on this sheet.

1 Put in the signs [4]

Put the signs ×, ÷, + and − in the gaps, each sign **once**, to make each statement true.

i. 12 ..... 4 ..... 3 ..... 2 ..... 5 = 19

ii. 12 ..... 4 ..... 3 ..... 2 ..... 5 = 10

2 The missing number [3]

Find the missing number: 48 ÷ ..... × 3 + 5 = 41

3 Spot the error [3]

Sudarshan simplified 36 − 12 ÷ 4 + 2 × 3 like this: 36 − 12 = 24, 24 ÷ 4 = 6, 6 + 2 = 8, 8 × 3 = 24. So the answer is 24.

i. What did he do wrong?

ii. Simplify it correctly.

4 Which statements fit the story? [4]

Kushal buys 4 notebooks at Rs. 60 each and one pen for Rs. 25. He pays with a Rs. 500 note. Which of these statements give his change? There may be more than one. For each, say why it fits or doesn't.

A. 500 − 4 × 60 + 25

B. 500 − 4 × 60 − 25

C. 500 − 60 × 4 − 25

D. 4 × 60 + 25 − 500

How much change does he get?

5 A school trip [3]

For a trip to Bhaktapur, a school hires 3 buses with 42 seats each. 118 students and 6 teachers go. Write one mathematical statement for the number of empty seats, and simplify it.

6 Equal or not? [3]

Simplify both sides, and say whether each pair is equal.

i. 24 ÷ 4 × 2 and 24 ÷ 2 × 4

ii. 7 × 8 + 7 × 2 and 7 × 10

iii. 50 − 20 + 10 and 50 − 30

7 A shop calculator [3]

A simple shop calculator works each step as soon as the next key is pressed. Kritika types 5 + 3 × 4 = on it.

i. What does the calculator show?

ii. What is the right answer by the order of operations?

iii. In what order should she press the keys so that the shop calculator gives the right answer?

8 Biggest and smallest [3]

Put the numbers 6, 3 and 2 in the gaps, each once: ..... + ... × .....

i. Which order gives the biggest answer?
ii. Which order gives the smallest answer?
iii. Write a rule for the biggest answer.

9 Make your own [3]

Make up a short story from everyday life that matches $100 - 4 \times 15 + 8$. Then simplify the statement, and say what the answer means in your story.

10 Think: four 4s [4]

Use exactly four 4s and any of the signs +, −, × and ÷ (no brackets) to make each of these numbers.

i. 2
ii. 7
iii. 9
iv. 17