


1 Basic calculation skills

Section 1: Basic calculations

HOMEWORK 1A

Solve these problems using written methods.
 Set out your solutions clearly to show the methods you chose.

- What do you need to add to each number to make 7?
 a 8 b 13 c -2
 - What would you subtract from each number to get a result of -12?
 a 8 b 6 c -4
-  **Tip**
 Learn the rules for calculations with negative numbers.
- 7 is multiplied by another number to get each result. Work out what the other number is in each case.
 a 14 b -98 c -49 d 343 e -7
 - By what would you divide -96 to get the following results?
 a 8 b -8 c 2 d $-\frac{1}{2}$ e -256
 - Here is a set of integers $\{-7, -5, -1, 2, 7, 11\}$.
 a Find two numbers with a difference of 7.
 b Find two numbers with a product of -7.
 c Find three different numbers with a sum of 4.
 d Find two numbers which, when divided will give an answer of -1.
 - Two more than -8 is added to the product of 8 and five less than 3.
 What is the result?

HOMEWORK 1B

- How many 12 litre containers can be completely filled from a tanker containing 783 litres?
- A train is travelling at a constant 64 mph.
 a How far does it travel in $1\frac{1}{2}$ hours?

- How long does it take to travel 336 miles?



Tip

64 mph means the train travels 64 miles each hour.

- A train starts a journey with 576 people on board.
 At the first station 23 people get on, 14 get off.
 At the second station 76 people get off and no one gets on.
 At the third station a further 45 people get on.
 How many people are on the train after the third station?
- Henry goes shopping with £125. He spends £26 on a DVD, £38.19 on a jumper and gets three books at £2.85 each.
 How much does he have left when he returns home?
- If six cups of coffee cost £11.70 and three cups of tea cost £4.23, how much would four cups of coffee and five cups of tea cost?
- Find the difference between the product of 17 and 51 and the sum of 156 and 652.

Section 2: Order of operations

HOMEWORK 1C

- The temperature one day in Aberdeen is 3°C . Overnight the temperature drops by 11°C .
 What is the temperature overnight?
- Calculate.
 a $13 - 4 + 8$ b $-4 - 3 - 7$
 c $-5 + 9 - 6$ d $-8 - (-5) + 3$
 e $-27 + (-12) - 18$
- Insert brackets into each calculation to make it true.
 a $4 \times 5 + 7 = 48$ b $35 - 20 \times 8 = 120$
 c $48 \div 4 \times 3 - 4 = -12$

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Tip

Remember, brackets change the order of operations.

- 4 Each \square represents an operation.
 Fill in the missing operations to make these statements true.

a $12 \square (36 \square 32) = 3$

b $95 \square (13 \square 8) = 19$

- 5 Work out without using a calculator:

a $\frac{10 \times \sqrt{25}}{3^2 + 4^2}$ b $\frac{6^2 \times \sqrt{4}}{2^2 \times 3^2}$
 c $\frac{\sqrt{4} + 5^2}{3^2 \times \sqrt{81}}$ d $\frac{6^2 + 8^2}{12^2 - (4^2 \times \sqrt{9}) + 2^2}$

Section 3: Inverse operations

HOMEWORK 1D



Tip

Remember, the inverse is the 'opposite' operation that reverses the effect of an operation.

- 1 Simplify.
 a $6 \times 11 + 4$ b $6 \times (11 - 2)$
 c $5 + 11 \times 2$ d $(3 + 12) \times 4$
 e $25 + 6 \times 3$ f $8 \times 3 \div (4 + 2)$
 g $(14 + 7) \div 3$ h $43 + 2 \times 8 + 6$
 i $24 \div 4 \times (8 - 5)$ j $16 - \frac{8}{2} + 5$
- 2 Use the numbers listed to make each number sentence true.
 a $\square - \square \div \square = \square$ 1, 18, 6, 4
 b $\square - \square \div \square = \square$ 8, 7, 3, 2
 c $\square \div (\square - \square) - \square = \square$ 2, 3, 4, 7, 15



Tip

Learn the rules about order of operations.

- 3 Use inverse operations to check the results of each calculation.

Correct those that are incorrect.

- a $50 \times 5 - 8 = 227$
 b $16 + 5 \times 8 - 12 = 50$
 c $(28 + 53) \times 4 = 264$
 d $(432 - 148) \div 4 = 71$

- 4 Use inverse operations to find the missing values in each of these calculations.

a $\square + 564 = 729$ b $\square + 389 = 786$

c $\square - 293 = 146$ d $132 \times \square = -3564$

e $-8 \times \square = 392$ f $\square \div 30 = 4800$

- 5 The formula for finding the area of a triangle is

$$A = \frac{bh}{2}$$

Find the height of a triangle if it has an area of 72 cm^2 and a base length of 8 cm .

Chapter 1 review

- 1 Bonita and Kim travel for $3\frac{1}{2}$ hours at 48 km per hour.
 They then travel a further 53 km .
 What is the total distance they have travelled?
- 2 On a page of a newspaper there are 8 columns of text.
 Each row contains a maximum of 38 characters.
 Each column has a total of 168 rows.
 a What is the maximum number of characters that can appear on a page?
 b The average word length is six characters, and each word needs a space after it.
 Estimate the number of words that can fit on a page.
- 3 A theatre has seats for 2925 people. How many rows of 75 is this?
- 4 Two numbers have a sum of -12 and a product of -28 . What are the numbers?
- 5 Jadheja's bank account was overdrawn. She deposited $\text{£}750$ and this brought her balance to $\text{£}486$.
 By how much was her account overdrawn to start with?
- 6 We use the formula $F = 2C + 32$ to convert temperatures from Celsius to Fahrenheit. Without using a calculator, find the temperature in degrees Celsius when it is:
 a 78°F b 120°F