Grade 7 Mathematics Worksheet

Section A: Fractions, Decimals, and Percentages

Understand the Relationships:

Fractions to Decimals: Divide the numerator (top number) by the denominator (bottom number). Use a calculator if allowed, or practice long division to get the exact decimal.

Decimals to Percentages: Multiply the decimal by 100 and add the percentage symbol (%). This is because "percent" means "per hundred," so you're converting the decimal into a form out of 100.

Simplifying Fractions: Find the greatest common divisor (GCD) of the numerator and denominator. Divide both the numerator and the denominator by their GCD to simplify the fraction.

1.Simplifying Fractions

Simplify the following fractions

$$\frac{18}{24}$$

$$\frac{45}{60}$$

2.Converting Fractions to Decimals

Convert the following fractions to decimals

$$\frac{3}{8}$$

$$\frac{7}{20}$$

3.Converting Decimals to Percentages

Convert the following decimals to percentages

a. 0.45

b. 0.07

4.Word Problem: Percentage

Sarah scored 75% on her math test. If the test had 40 questions, how many questions did Sarah answer correctly?

Section B: Algebra and Equations

5.Solving for X

Solve the following equations for x

a) 3x+5=20

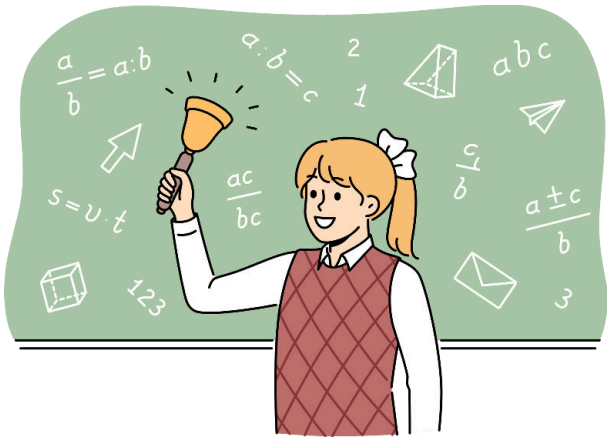
b) 2(x−4)=10

6.Word Problem: Algebra

A rectangle's length is 3 times its width. If the perimeter of the rectangle is 48 cm, find the length and width of the rectangle.

Did you know that algebra helps us create computer animations?

Algebra is used in computer graphics to create the animations you see in movies and video games. By using algebraic equations, animators can make characters move, create special effects, and design complex scenes. So, the next time you watch a cool animation, remember that algebra is making it all possible!



Section C: Geometry

7.Properties of Shapes

List the properties of the following shapes:

a) Rectangle

_____

_____

b) Triangle (Equilateral)

_____

_____

8.Calculating Area and Perimeter

Find the area and perimeter of a square with a side length of 5 cm.

_____

_____

_____

_____

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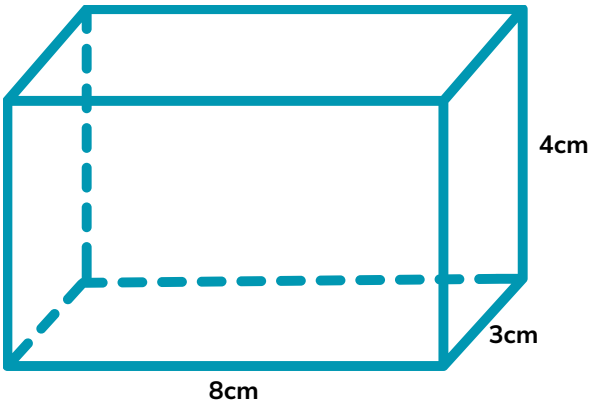
9.Volume of Rectangular Prism Calculate the volume of a rectangular prism with the following dimensions: length = 8 cm, width = 3 cm, and height = 4 cm.



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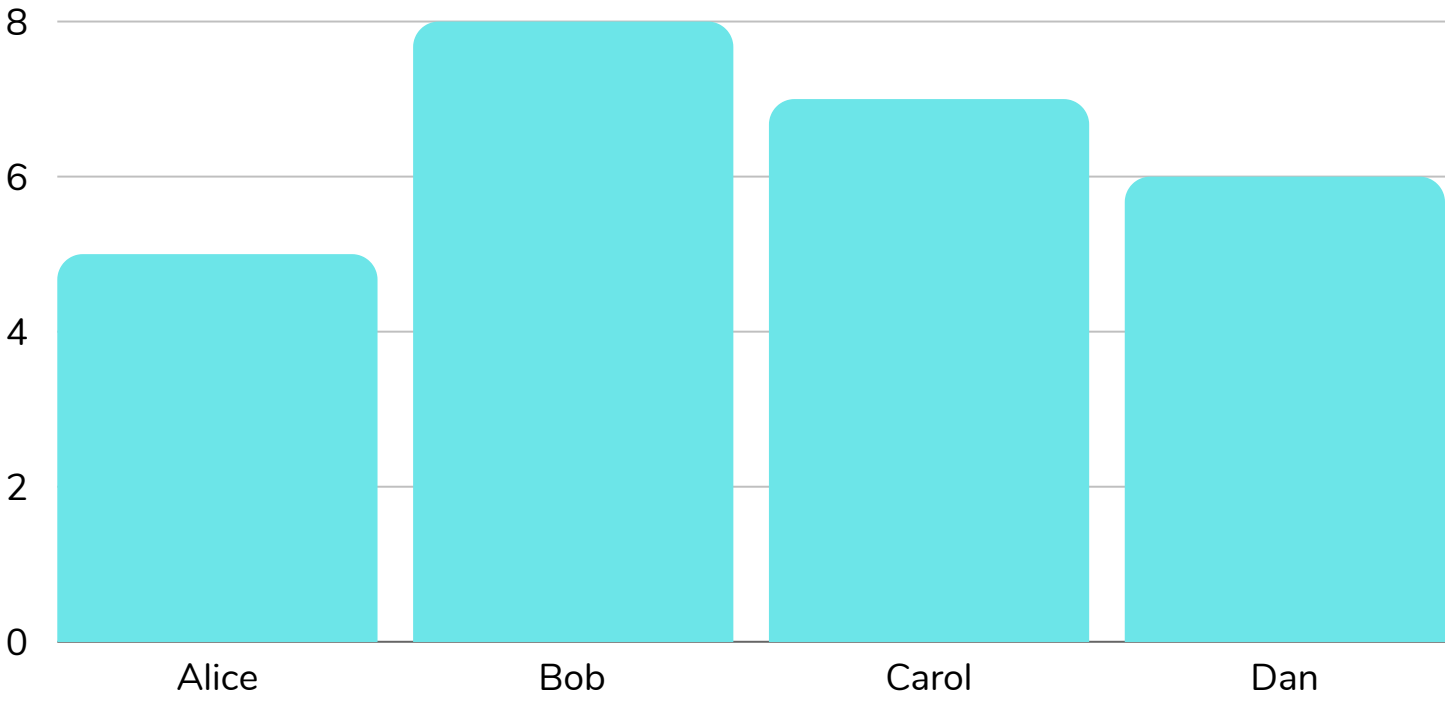
Section D: Data Handling

Interpreting Bar Graphs

The bar graph below shows the number of books read by students in a month:



10.Answer the following questions:

a) Who read the most books?

_____

b) How many more books did Bob read than Dan? c) What is the total number of books read by all four students?

_____

c) What is the total number of book read by all four students?

_____

Section E: Patterns and Sequences

Did you know that patterns and sequences are like puzzles?

Just like solving a puzzle, finding the next number in a sequence or pattern involves looking for hidden rules. Once you figure out the rule, the rest of the pattern falls into place! This skill helps in everyday problem-solving and even in future careers like coding and engineering.

11.Finding the Next Term

Identify the next term in the following sequences:

a) 2, 5, 8, 11, _____

b) 3, 9, 27, 81, _____

12.Word Problem: Patterns

A pattern of tiles on a wall is created using squares and triangles. If the pattern starts with 1 square, followed by 2 triangles, then 3 squares, then 4 triangles, and so on, how

many shapes will there be in the 5th step of the pattern?

_____

Section F: Probability

Top Tip for Understanding Probability

Remember the Probability Formula:

Probability is all about understanding the likelihood of an event happening. The basic formula to remember is:

$$\text{Probability (P)} = \frac{\text{Number of favourable outcomes}}{\text{Total number of possible outcomes}}$$

13.Basic Probability

A bag contains 5 red, 3 blue, and 2 green marbles. If a marble is drawn at random, what is the probability that it is:

a) Red?

b) Not green?

14.Word Problem: Probability

There are 4 blue pens and 6 black pens in a drawer. If you randomly pick a pen without looking, what is the probability that you will pick a blue pen?

_____

_____

_____

_____