

4. A Hi-speed usb has a download rate of 3.84×10^9 bits per second. 1 byte = 8 bits.

Calculate the download rate in bytes per second. Give your answer in scientific notation (standard form). [3]

4. Solve

$$\frac{x}{4} + \frac{13}{20} = \frac{x}{5}$$

[4]

Equation after applying Lowest Common Denominator

$$\frac{\quad}{\quad} + \frac{\quad}{\quad} = \frac{\quad}{\quad}$$

Equation after removing Denominators

$$\quad + \quad = \quad$$

Final Solution

$$x =$$

4. (a) Solve the inequality below. [3]

$$8m - 7 \geq 5m + 14$$

Inequality after rearranging Constants and Variables

$$>$$

Inequality after simplifying Constants and Variables

$$>$$

- (b) Show your solution to (a) on a number line. [2]



3. Simplify:

(a) $\frac{x}{5} + \frac{7x}{3}$

[2]

Fraction after applying Lowest Common Denominator

$$\frac{\quad}{\quad} + \frac{\quad}{\quad}$$

Simplified Fraction

$$\frac{\quad}{\quad}$$

(b) $\frac{45g}{8} \div \frac{15g^2}{24}$

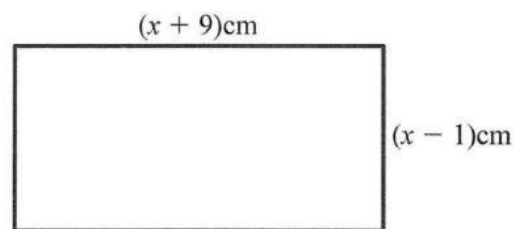
[3]

Fraction after applying Reciprocal

_____ × _____

Simplified Fraction

4. A rectangle is shown below.



The length of the rectangle is $(x + 9)$ cm. The width of the rectangle is $(x - 1)$ cm.

- (a) Form an expression for the perimeter of the rectangle. [1]

- (b) Given that the perimeter is 64 cm, form an equation and find the value of x . [4]

Perimeter Equation

=

Solution of x

$x =$

- (c) State the width of the rectangle. [1]

Width =

4. A fisherman has 10 groupers for sale.
The mean weight of the 10 groupers is 14 kg.
He sells two groupers that weigh a total of 32 kg.
Find the mean weight of the remaining groupers. [3]

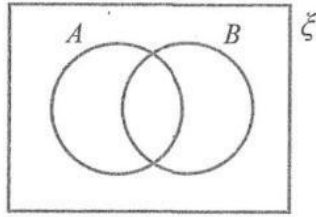
Total Weight = **kg**

Mean Weight of The Eight Groupers = **kg**

4. Let $\zeta = \{x \text{ is a natural number: } x \leq 10\}$

$A = \{\text{even numbers}\}$

$B = \{\text{factors of 12}\}$



(a) Copy and complete the Venn diagram illustrating the sets above. [4]

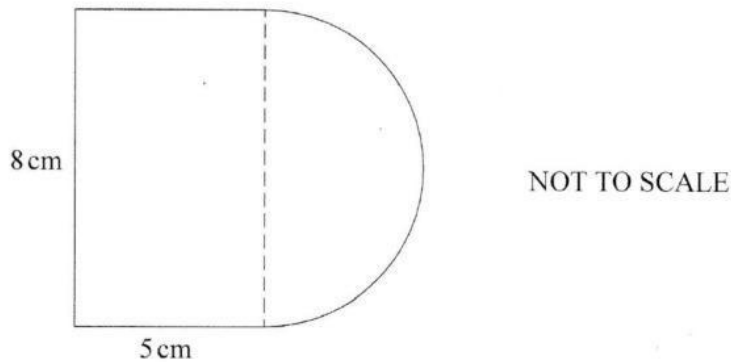
(b) List the elements of the following sets.

(i) $A \cap B$ [1]

(ii) A' [1]

(c) Find $n(A \cup B)$. [1]

4.



The compound figure above comprises a rectangle and a semicircle.

Using $\pi \approx 3.14$ where necessary, find:

(a) the total area of the figure, [4]

Area of Rectangle = **cm²**

Area of Semi-Circle = **cm²**

Total Area = **cm²**

(b) the total perimeter of the figure. [3]

Perimeter of Rectangle Portion = **cm**

Perimeter of Semi-Circle Arc = **cm**

Total Perimeter = **cm**