

Q1) a) Total matches played = x

Percentage of matches won = 60%

Percentage of matches lost = 40%

Number of matches lost = 24

Number of matches won = y

Finding the matches won ' y ' :

Percentage	No. of matches	R.W
40%	24	60
60%	y	$\frac{24 \times 60}{40}$
		$\frac{1440}{40}$

(cross multiply \rightarrow) $60 \times 24 = 40 \times y$

$$\frac{1440}{40} = y$$

$$y = 36$$

Total Matches played

$$x = 36 + 24$$

$$x = 60$$

Total number of matches played were 60

Date: _____

b)	Person	:	Sugar	:	Days
	30	↑	40	↓	10
	80		320		x

Hence: direct proportion Day: sugar / Indirect porportion Day
Person

$$\frac{10}{x} = \frac{40}{320} \times \frac{80}{30}$$

$$\frac{10}{x} = \frac{3200}{9600} \quad \therefore \text{cross multiply}$$

$$3200x = 96000$$

$$x = \frac{96000}{3200}$$

$$x = 30 \text{ days}$$

Hence, it will take 30 days for 80 persons to use 320 Kg of Sugar.

c) let first and third part be $3x$ and $5x$

$$\text{Second Part} = \frac{1}{4} \times 5x \rightarrow \frac{5x}{4}$$

Sum of all three part = \$370

$$\Rightarrow 3x + \frac{5x}{4} + 5x = 370$$

$$\frac{37x}{4} = 370$$

$$x = \frac{370 \times 4}{37}$$

$$x = \$40$$

$$\text{First Part} = 3 \times 40 \rightarrow \$120$$

$$\text{Second Part} = \frac{5(40)}{4} \rightarrow \$50$$

$$\text{Third Part} = 5 \times 40 \rightarrow \$200$$

d) Mean of 6 numbers = 20

Mean of 5 number = 15

Number removed = x

Date: _____

→ Mean of 6 numbers

$$\text{Mean} = \frac{\text{sum 1}}{\text{total no.}}$$

$$20 = \frac{\text{sum 1}}{6}$$

$$\text{sum 1} = 120$$

→ Mean of 5 numbers

$$\text{Mean} = \frac{\text{sum 2}}{\text{total no}}$$

$$15 = \frac{\text{sum 2}}{5}$$

$$\text{sum 2} = 75$$

→ Number removed: x

$$x = \text{sum 1} - \text{sum 2}$$

$$x = 120 - 75$$

$$x = 45$$

Removed number
was 45

Q2)

a) Computer buses are the components responsible for transmitting data/ information internally ~~through~~ to different ~~comp~~ components of a computer, and transmitting data/ information externally from one computer to another. There are three types of computer buses as under:

1) Data Bus: responsible for transmitting data externally to other computers. It is a bi-direction bus which means it is also used to receive information from other computers. ~~The~~ The speed of the information flow depends on the number of bits data bus can carry: 4, 16, 32, 64, ~~the~~ ~~not~~

2) Address Bus: Responsible for sending data internally to different components. These type of buses are uni-directional and used by different component to communicate.

3) Control Bus: These are used to transmit information internally. control buses are bi-directional and used to send commands to different components.

b) i) Classification of computers based on size and memory.

Super Computers	Industrial use / largest use / large size
Main Frame Computers	used in hospitals / size smaller than super computers
Mini Computers	collegiate use, business / smaller than main frame
Desktop Computers	personal computers / not portable
Laptops / Notebook	smaller than desktop / are portable

2) Classification based on capacity & Function

Analog Computer	Calculations / sound Recording / encoding data
Digital Computer	use of digits / words
Hybrid Computer	converts analog signals to digital ones / complex simulations

3) Classification of computers according to speed

- 1) Pentium 1, 2, 3, 4
 - 2) i3, i5, i7 processors.
 - 3) Multi and dual processors
 - 4) Xeon, Sparc, Celeron
- ↓
Faster

c) A ~~cell~~ cell phone works on the principle of transmitting radio waves from one phone to another. Below is the step by step process of how a mobile phone works:

→ Steps:

- 1) When a person speaks his voice is converted digital signals
- 2) These signals are sent to the nearest cell tower in the vicinity
- 3) The cell tower passes these signals to the base station.
- 4) Calls are then routed to the base station nearest to the destination.

Note: The phone number acts as a address to which the calls are routed.

d) John McCarthy, ~~the~~ one of the founding fathers of Artificial Intelligence in the following words: "It is the science and engineering of intelligent machines, especially intelligent computer programs". In simpler words, Artificial Intelligence refers to the simulation of human intelligence processes by machines.

Can AI outsmart humans:

Yes it can. Artificial Intelligence works by gathering data. It prompts feedback after each executed task, and over time improves the accuracy of tasks, producing desired results. Since AI machines improve over time, there is a high probability that they can produce outputs that exceed human intelligence.