

$$\textcircled{1} \text{ Prob (wage} < \$4.495) = \frac{5 + 55 + 20}{5 + 55 + 20 + 15 + 5} = 0.8$$

Ans: D

$\textcircled{2}$ Ans: C

$\textcircled{3}$ Find percentages. Ans: C

$$\textcircled{4} \text{ Mean} = \frac{\$1200 + \$800 + 5 \cdot (\$400) + 3 \cdot (\$700)}{10} = \$610$$

Ans: A

⑤ Process:

Mid point	(Mid point) · (frequency)

$$\text{Mean} = \frac{\sum (\text{Midpoint}) \cdot (\text{frequency})}{n}$$

$n = 20$ (total # of data points)

Ans: C

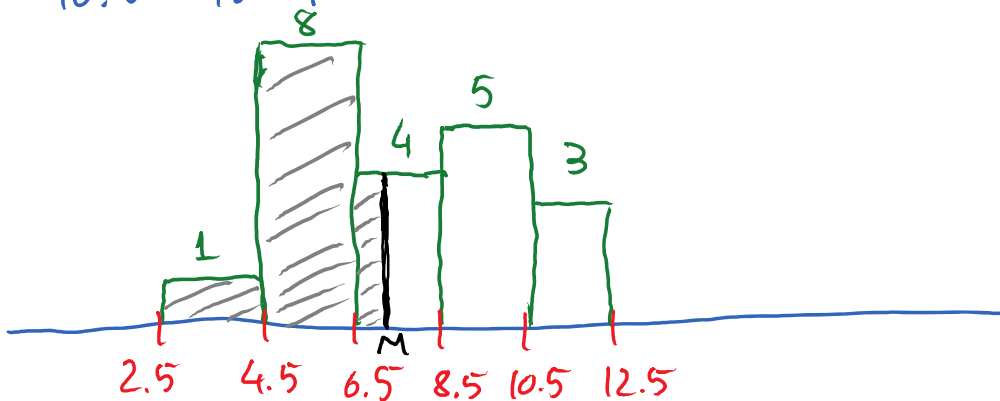
⑥ Am: C

(7)

Interval	Frequency	Cummulative frequency
2.5 - 4.5	1	1
4.5 - 6.5	8	9
6.5 - 8.5	4	13
8.5 - 10.5	5	18
10.5 - 12.5	3	21

Find Median M

$$(M - 6.5)4 + 9 \cdot 2 = \frac{21 \cdot 2}{2}$$



⑧ Ans: D

⑨ Process for finding Standard Deviation

Value x	Value - Mean $(x - \mu)$	(Value - Mean) ² $(x - \mu)^2$
$\vdots$	$\vdots$	
↓ Mean μ		↓ Sum of (Value - Mean) ² Σ

S.D. :

$$\sigma = \sqrt{\frac{\Sigma}{n-1}}$$

Ans: B.

⑩ First, find the mean. μ

Second, find the S.D. σ .

Next, count how many data points in the interval $(\mu - 2\sigma, \mu + 2\sigma)$

Then find the percentage.

Ans: B

⑪ This is finding S.D. of grouped data. Find midpoints of the intervals and use those together with the frequencies to find the S.D.

Ans: A

$$(12) \text{ Range} = \max - \min = \$387 - \$128 = \$259$$

Ans: C

$$(13) C(6,3) \cdot \left(\frac{1}{6}\right)^3 \left(\frac{5}{6}\right)^3 = 0.0536$$

Ans: C

$$(14) n=4, \quad p=0.42, \quad q=1-p=0.58$$

$$\begin{aligned} \text{Prob (at least 2 hits)} &= p(2) + p(3) + p(4) \\ &= C(4,2)(0.42)^2(0.58)^2 + C(4,3)(0.42)^3(0.58) + \\ &\quad C(4,4)(0.42)^4(0.58)^0 \\ &= 0.559. \quad \text{Ans: B.} \end{aligned}$$

(15) $n = 10$; $p = q = 0.5$.

$$\begin{aligned} \text{Prob of passing} &= p(7) + p(8) + p(9) + p(10) \\ &= C(10, 7)(0.5)^7(0.5)^3 + C(10, 8)(0.5)^8(0.5)^2 + \\ &\quad C(10, 9)(0.5)^9(0.5) + C(10, 10)(0.5)^{10}(0.5)^0 \\ &= 0.172 . \end{aligned}$$

Ans : D.

(16) $\text{mean} = np = 16 \cdot (0.22) = 3.52$

Ans : A.

$$(17) \text{ z-score of } 224 = \frac{224 - 200}{50} = 0.48$$

From z-score table, Area from mean to 224 is 0.1844

Ans: C

$$(18) \text{ z-score of } 134.9 = \frac{134.9 - 120}{5} = 2.98$$

$$(19) n = 100, p = 0.85, q = 0.15$$

$$\text{Mean: } \mu = np = 85. \quad \text{S.D. } \sigma = \sqrt{npq} = 3.57$$

$$P(X \geq 90) \rightarrow \text{binomial. Use normal} \rightarrow P(X \geq 89.5)$$

$$z\text{-score of } 89.5 = \frac{89.5 - 85}{3.57} = 1.26. \rightarrow \text{area} = 0.3962$$

$$P(X \geq 89.5) = 0.5 - 0.3962 = 0.1038$$

Ans: C

$$(20) \quad P(X \geq 0.32)$$

$$\mu = 0.3 ; \sigma = 0.01$$

Find z -score of 0.32. Find area. $P(X \geq 0.32) = 0.5 - \text{area}$.

Ans: B