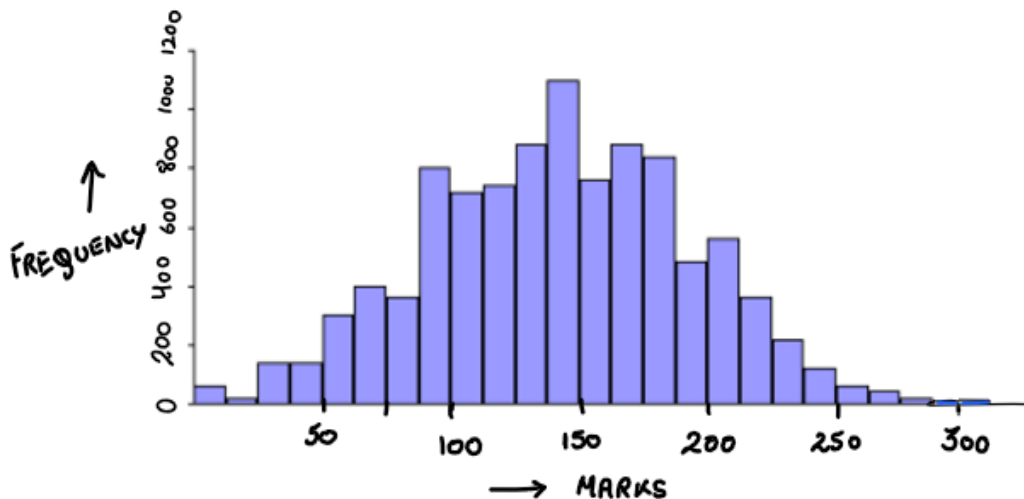# LESSON 5: STANDARDIZING

Q1. WHICH WOULD BE THE BEST INDICATOR OF YOUR PERFORMANCE IN CAT (MBA ENTRANCE) EXAM ?
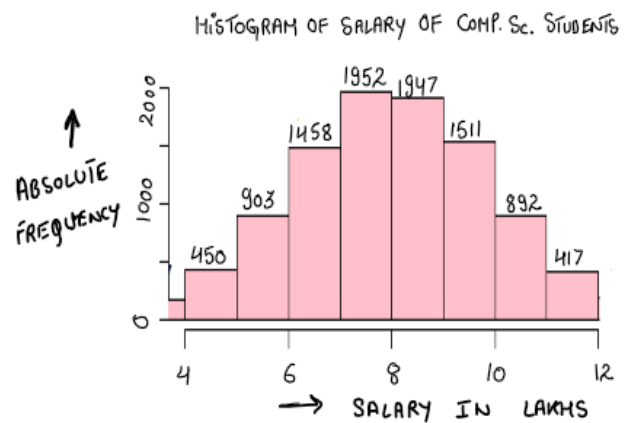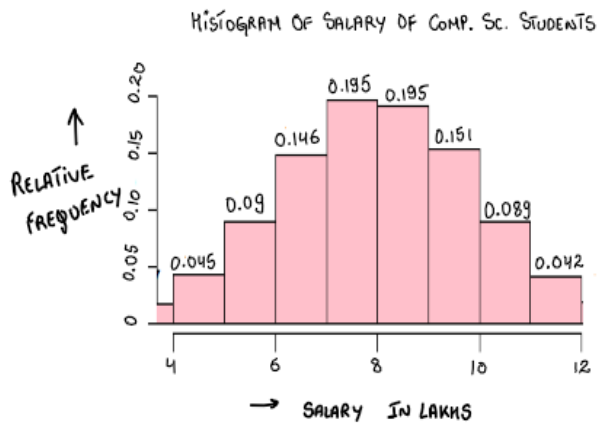

(a.) I SCORED 200 MARKS OUT OF 360.

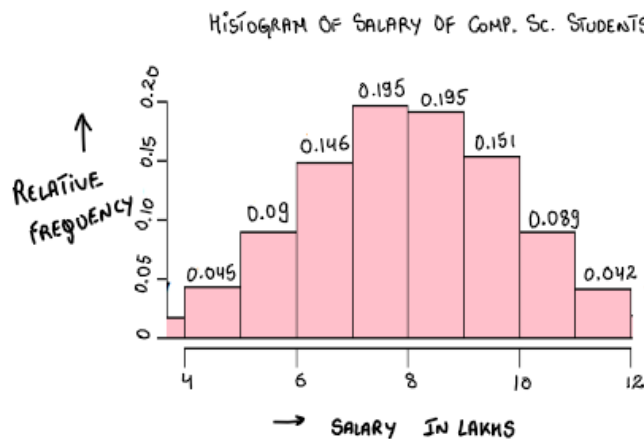(b.) MY RANK IS 1103.

(c.) SCORED HIGHER THAN 91% OF STUDENTS.

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Q2. WHAT PROPORTION OF STUDENTS EARN B/W 7 AND 9 LAKHS?

(a.) 0.195   (b.) 0.39   (c.) 0.346   (d.) WE CAN'T TELL FOR CERTAIN

HISTOGRAM OF SALARY OF COMP. SC. STUDENTS

RELATIVE FREQUENCY vs SALARY IN LAKHS: 0.045, 0.09, 0.146, 0.195, 0.195, 0.151, 0.089, 0.042

HISTOGRAM OF SALARY OF COMP. SC. STUDENTS

ABSOLUTE FREQUENCY vs SALARY IN LAKHS: 450, 903, 1458, 1952, 1947, 1511, 892, 417

Q3. WHAT PROPORTION OF STUDENTS EARN BETWEEN 7.5 AND 8.5 LAKHS?

(a.) WE CAN'T TELL FOR CERTAIN   (b.) 0.195   (c.) 0.39   (d.) 0.25

HISTOGRAM OF SALARY OF COMP. SC. STUDENTS

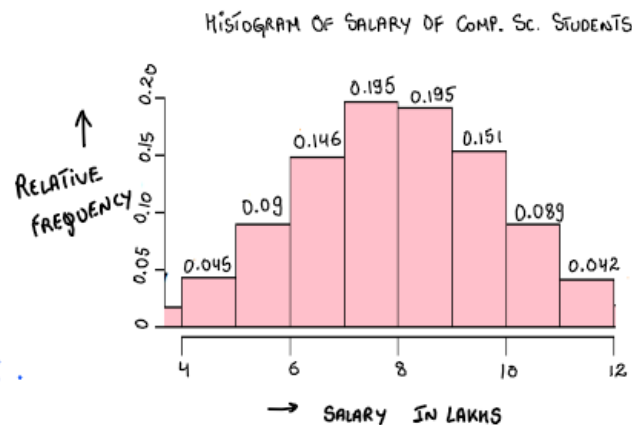RELATIVE FREQUENCY vs SALARY IN LAKHS: 0.045, 0.09, 0.146, 0.195, 0.195, 0.151, 0.089, 0.042

Q4. WHAT WOULD BE MORE HELPFUL TO US IF WE HAVE TO FIND THE PROPORTION OF STUDENTS EARNING B/w 7.5 AND 8.5 LAKHS?

\# ADDING MORE VALUES TO DATASET

\# INCREASING THE BIN SIZE

\# A SMALLER BIN SIZE.

HISTOGRAM OF SALARY OF COMP. Sc. STUDENTS

RELATIVE FREQUENCY

0.045 0.09 0.146 0.195 0.195 0.151 0.089 0.042

SALARY IN LAKHS

http://www.shodor.org/interactivate/activities/Histogram

Q5. WHAT IS THE AREA UNDER THE THEORETICAL CONTINUOUS CURVE?

CONTINUOUS CURVE

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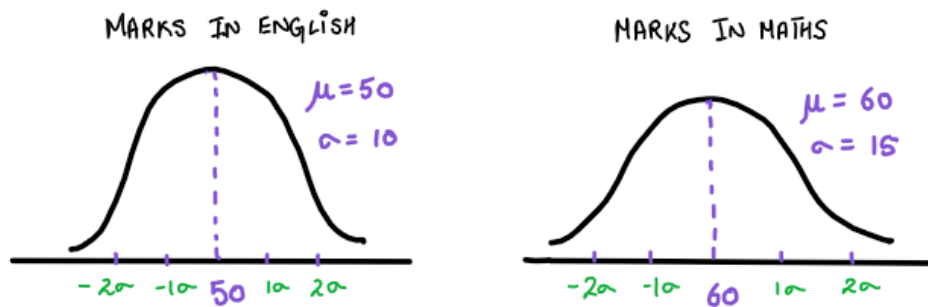📞 9923170071, 8108094992

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TECHNOLOGY

Q6. Ram scored 70 marks in English and 75 marks in Maths. According to you Ram's performance is better in which subject?

○ English   ○ Maths   ○ Can't say

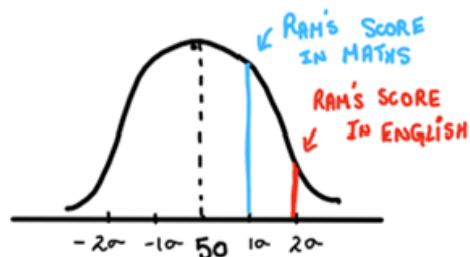**Q7.** How many S.D.'s is Ram's score in English and Maths away from mean?

MARKS IN ENGLISH

$\mu = 50$
$\sigma = 10$

-2σ -1σ 50 1σ 2σ

MARKS IN MATHS

$\mu = 60$
$\sigma = 15$

-2σ -1σ 60 1σ 2σ

Q8. So, can we now say that Ram's performance in Maths is better than in English?

○ Yes

○ No

Ram's score in Maths

Ram's score in English

-2σ -1σ 50 1σ 2σ

Q9. Which Formula We Used To Find The No. Of S.D.'s Of Each Value (lets call it x) Is Away From Mean?

(a.) $\mu - x$

(b.) $x - \mu$

(e) $(\mu - x) \sigma$
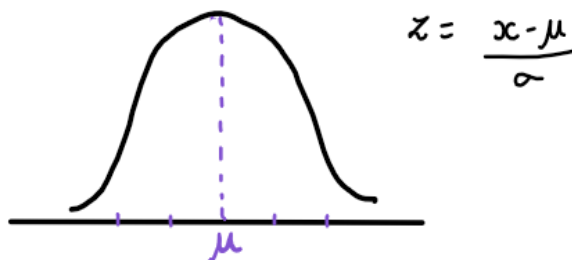
(c.) $(x - \mu) \sigma$

(d.) $\dfrac{x - \mu}{\sigma}$

Q10. What Does A Negative z-Score Mean?

○ The Value Of x Is Negative

○ The Value Of x Is Less Than Mean

○ The Value Of x Is Less Than 0

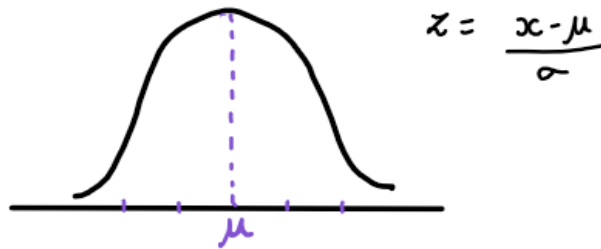**Q11.** If We Standardize A Distribution By Converting Every Value To A z Score, What Will Be The New Mean Of This Standardized Distribution?
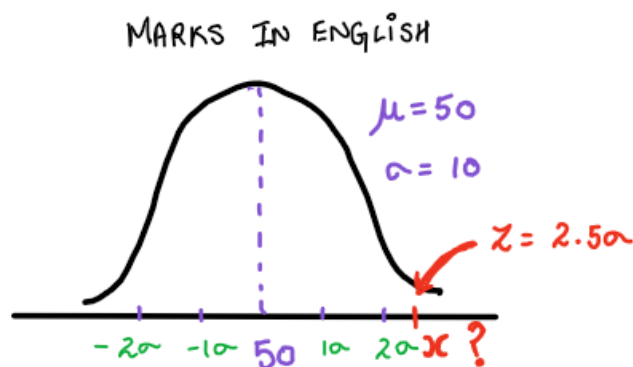
$$z = \dfrac{x - \mu}{\sigma}$$

Q12. IF WE STANDARDIZE A DISTRIBUTION BY CONVERTING EVERY VALUE TO A Z SCORE, WHAT WILL BE THE NEW S.D. OF THIS STANDARDIZED DISTRIBUTION?

$$z = \frac{x - \mu}{\sigma}$$

Q13. HOW MANY MARKS HAS RAHUL SCORED IN ENGLISH IF HIS SCORE IS 2.5σ ABOVE THE MEAN?

MARKS IN ENGLISH

$\mu = 50$

$\sigma = 10$

$z = 2.5\sigma$

$-2\sigma \quad -1\sigma \quad 50 \quad 1\sigma \quad 2\sigma \quad x\ ?$

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Q14.

If Rahul scored 75 marks in English; what would be his equivalent marks in maths?

MARKS IN ENGLISH

$\mu = 50$
$\sigma = 10$
$x_E = 75$

-2σ -1σ 50 1σ 2σ

MARKS IN MATHS

$\mu = 60$
$\sigma = 15$
$x_M = ?$

-2σ -1σ 60 1σ 2σ