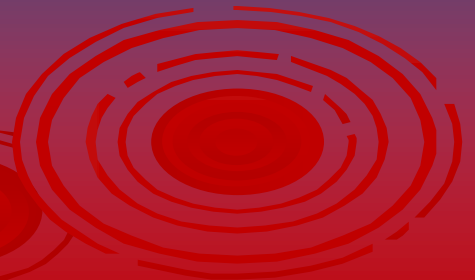
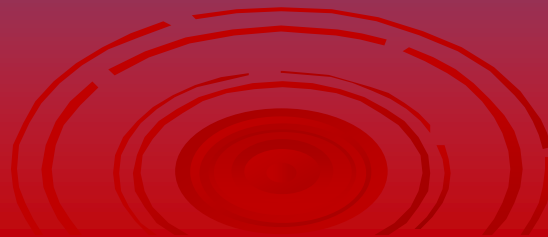
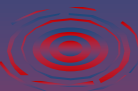




TOPIC

STATISTICS



Q5: $N=10$; $\Sigma x = 150$; $\Sigma x^2 = 2472$

(a) (i) Mean, $\bar{x} = \frac{\Sigma x}{N} = \frac{150}{10}$ 
 $= 15$ 

(ii) Variance, $\sigma^2 = \frac{\Sigma x^2}{N} - \bar{x}^2$

$= \frac{2472}{10} - 15^2$ 

$= 22.2$ 

Q5:(samb..)

(b) (i) Let the new number added = x

$$N = 11$$

$$\text{New mean} = 16$$

$$\Sigma x_{\text{new}} = 150 + x$$

$$\frac{150 + x}{11} = 16$$

✓ M1

$$x = 26$$

✓ A1

Q5(b): (samb..)

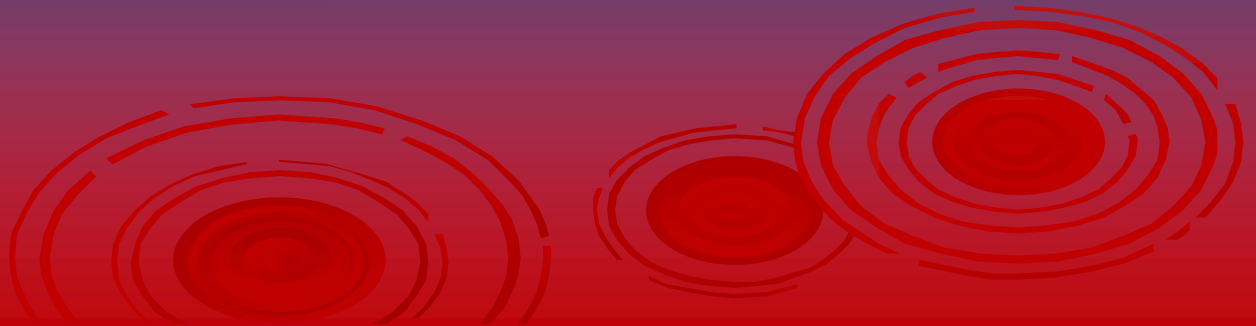
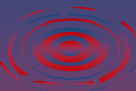
$$(ii) \quad \Sigma x^2_{new} = 2472 + 26^2$$

$$\sigma_{new} = \sqrt{\frac{2472 + 26^2 - 16^2}{11}}$$

$$= 5.494$$

√ A1

√ M1



Q6:

f	x (midpoint)	fx	fx^2
7	133	931	123823
8	138	1104	152352
13	143	1859	265837
10	148	1480	219040
8	153	1224	187272
4	158	632	99856
$\Sigma f = 50$	-	$\Sigma fx = 5\ 890$	$\Sigma fx^2 = 1\ 048\ 180$

✓ M1

✓ M1

Based on the formula of mean and variance, prepare the above table for a much easier procedure of solving the problem

Q6: (samb..)

(a) mean = $\frac{5\ 890}{50} = 117.8$

$\bar{x} = \frac{\Sigma fx}{\Sigma f}$

(b) variance = $\frac{1\ 048\ 180}{50} - (117.8)^2$

= 7 086.76

$\sigma^2 = \frac{\Sigma fx^2}{\Sigma f} - \bar{x}^2$

(c) std. dev. = 84.18

$\sigma = \sqrt{\sigma^2}$