

# SOLUTIONS

**QUIZ 2 - Version 1**  
**201-BZS-05**  
**Probability & Statistics**  
Instructor: Emilie Richer  
Date: Feb 6<sup>th</sup> 2009

Question 1 (4 marks) Complete the following grouped frequency table:

Class Marks	Frequency	Class Boundaries	Class Limits
10	4	7.5 - 12.5	8 - 12
15	6	12.5 - 17.5	13 - 17
20	5	17.5 - 22.5	18 - 22
25	3	22.5 - 27.5	23 - 27
30	2	27.5 - 32.5	28 - 32

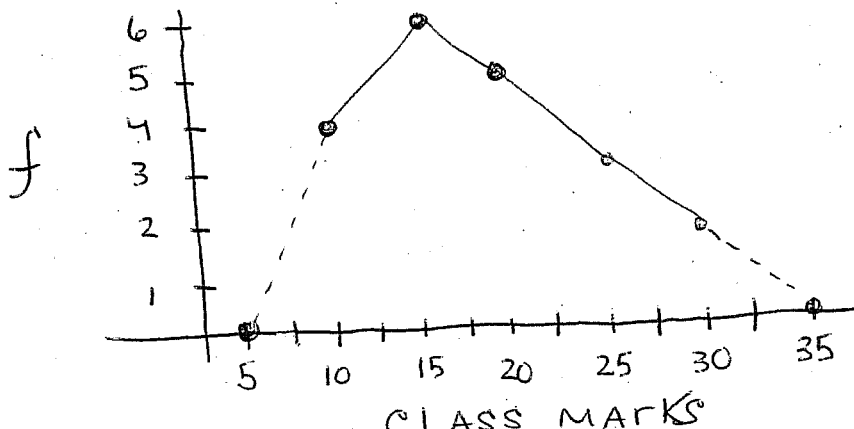
Question 2 (4 marks) Using the above table compute the following statistics:

- (a) The (approximate) mean  
(b) The (approximate) standard deviation

$$\bar{x} \approx \frac{\sum M \cdot f}{20} = \frac{40 + 90 + 100 + 75 + 60}{20} = \frac{365}{20} = 18.25$$

$$s \approx \sqrt{\frac{(\sum M^2 f) - \frac{(\sum M f)^2}{20}}{19}} = \sqrt{\frac{7425 - \frac{(365)^2}{20}}{19}} = 6.34$$

Question 3 (2 marks) Represent the data in the table using a polygon.



**QUIZ 2 - Version 2**  
**201-BZS-05**  
**Probability & Statistics**  
 Instructor: Emilie Richer  
 Date: Feb 6<sup>th</sup> 2009

SOLUTIONS

**Question 1** (4 marks) Complete the following grouped frequency table:

Class Marks	Frequency	Class Boundaries	Class Limits
11	2	8.5 - 13.5	9 - 13
16	3	13.5 - 18.5	14 - 18
21	5	18.5 - 23.5	19 - 23
26	6	23.5 - 28.5	24 - 28
31	4	28.5 - 33.5	29 - 33

**Question 2** (4 marks) Using the above table compute the following statistics:

- (a) The (approximate) mean  
 (b) The (approximate) standard deviation

$$\bar{x} \approx \frac{\sum M \cdot f}{n} = \frac{22 + 48 + 105 + 156 + 124}{20} = \frac{455}{20} = \boxed{22.75}$$

$$s \approx \sqrt{\frac{\sum M^2 \cdot f - \frac{(\sum M \cdot f)^2}{n}}{n-1}} = \sqrt{\frac{11115 - \frac{(455)^2}{20}}{19}} = \boxed{6.34}$$

**Question 3** (2 marks) Represent the data in the table using a cumulative frequency polygon.

