

Weight (kg)	Midpoint, x_{kg}	Frequency, f
0.0 – 1.0	0.50	1
1.0 – 2.0	1.50	6
2.0 – 2.5	2.25	60
2.5 – 3.0		280
3.0 – 3.5	3.25	820
3.5 – 4.0	3.75	320
4.0 – 5.0	4.50	10
5.0 – 6.0		3

- Write down the missing midpoints in the table above. (2)
- Calculate an estimate of the mean birth weight. (2)
- Calculate an estimate of the standard deviation of the birth weight. (3)
- Use interpolation to estimate the median birth weight. (2)

Solutions

1a.

2.75	M1
5.5	M1

1b.

Mean birth weight = $\frac{4841}{1500}$	M1
= 3.2273.... = 3.23	M1

1c.

Standard deviation = $\sqrt{\frac{15889.5}{1500} - \left(\frac{4841}{1500}\right)^2}$	M1
= 0.421093....	M1
= 0.4211	M1

1d.

$Q_2 = 3 + \frac{403}{820} \times 0.5$	M1
= 3.2457.... = 3.25	M1

