Solutions

2.1

- $3\sigma/\sqrt{n} = 3 \times 3/2 = 4.5$ g.
- Limits 245.5 and 254.5 g.

2.2

- $\bar{R} = 2.059 \times 3 = 6.18$ g.
- $UCL_R = 2.282 \times 6.18 = 14.1$ g.

2.3

- Order as given: 38, 27, 15, 12, 8; total 100.
- Top two $65/100 = 65\%$ - cracking and filling are the vital few.

2.4

- Total $900 + 1{,}500 + 4{,}200 + 6{,}400 = 13{,}000$.
- Failure $10{,}600/13{,}000 = 81.5\%$; of sales $13{,}000/80{,}000 = 16.3\%$.

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