EXERCISE 10A

1   **a, b**   The manufacturer wants a particular volume of drink (or diameter of bolt), and so that value is generally the mean. However, minor variations in the filling of the can (or machining of the bolt) lead to some volumes (or diameters) being slightly larger than the mean, and some being slightly less than the mean. However, it is unlikely that the volumes (or diameters) will be *much* larger, or *much* smaller.

2   **a** 0.683   **b** 0.477

3   **a** 15.9%   **b** 84.1%   **c** 97.6%   **d** 0.13%

4   3 times   5   **a** 459 babies   **b** 446 babies

6   **a**   **i** 34.1%   **ii** 47.7%

    b   **i** 0.136   **ii** 0.159   **iii** 0.0228   **iv** 0.841

7   **a** 0.341   **b** 0.159   **c** 0.0228

8   **a** 84.1%   **b** 2.28%   **c**   **i** 2.15%   **ii** 95.4%

    d   **i** 97.7%   **ii** 2.28%

9   **a** 41 days   **b** 254 days   **c** 213 days

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EXERCISE 10B

1   **a** 0.341   **b** 0.383   **c** 0.106

2   **a** 0.341   **b** 0.264   **c** 0.212   **d** 0.945

    e 0.579   **f** 0.383

3   **a** 0.248   **b** 0.798   **c** 0.205   **d** 0.427

    e 0.0859   **f** 0.457

4   **a** 0.334   **b** 0.166

5   **a** 0.585   **b** 0.805   **c** 0.528   **6** 0.378

7   **a**   **i** 0.904   **ii** 0.0912   **b** ≈ 11 weeks

8   **a** 0.0509   **b** 52.1%   **c** ≈ 47 eels

9   **a** 0.303   **b** 0.968   **c** 0.309

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EXERCISE 10C

1 **a**

$k \approx 18.8$

b

0.878

$k \approx 23.5$

c

0.5

$k = 20$

2 **a**

0.9

38.7 k

$k \approx 49.2$

b

0.2

k 38.7

$k \approx 31.8$

3 **a**

0.57

$30 \, a$

$\therefore \quad a > 30$
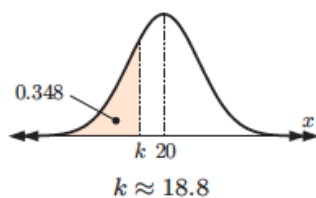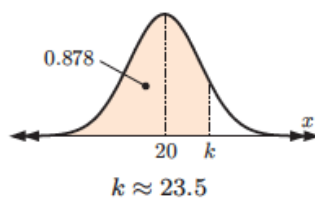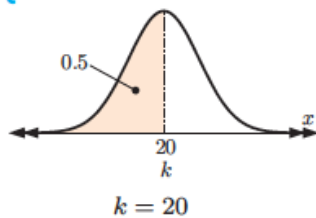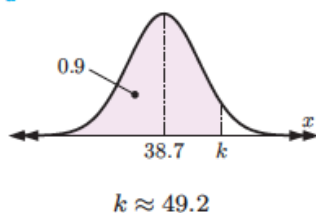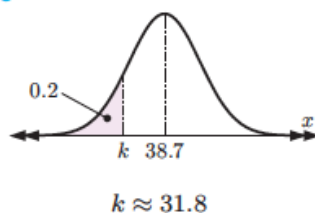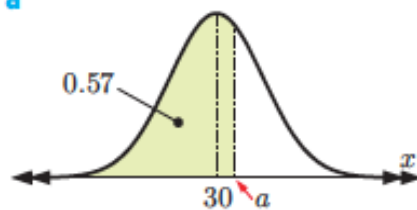
b $a \approx 30.9$

c **i** 0.43

ii 0.07

4 **a** 21.4   **b** 21.8   **c** 2.82

5 83   **6** 24.7 cm   **7** 75.2 mm

8 **a** 1.98 kg   **b** 1.40 kg   **9** 502 mL to 504 mL

REVIEW SET 10A

1   a   2.28%   b   95.4%   c   68.3%

2   a   i   2.28%   ii   84.0%   b   0.341

3   a   0.683   b   0.954   c   0.401   d   0.894   4   31.2 mm

5   a $\mu = 29$, $\sigma \approx 10.7$ b   i   0.713   ii   0.250

6   a   6.68%   b   137 bags   7   138 seconds

REVIEW SET 10B

1   a   0.136   b   0.341   2   a   0.364   b   0.356   c $k = 18.2$

3   a   2.28%   b   84.1%   c   81.9%

4   a   0.341   b   0.0228   c   0.238   d   0.225

5   a   0.260   b   29.3 weeks

6   0 to 18.6 words per minute   7   17.5°C to 30.8°C

REVIEW SET 10C

1   a ≈ 0.279 b ≈ 0.238 c ≈ 0.415

2   a ≈ 0.274 b   i ≈ 0.726 ii ≈ 0.226

3   a ≈ 0.758 b ≈ 0.115 c ≈ 0.285

4   a $k \approx 19.7$ b $k \approx 28.0$

5   a ≈ 0.258 b   about 243 suitcases   c   23.0 kg

6   a k is greater than 25.   b $k \approx 26.8$

7   a ≈ 0.0478 b   i   1446   ii   57.4 mins