Solutions

Each answer shows the steps, then the **result**.

2.1

- $\bar{x} \pm t^* \dfrac{s}{\sqrt{n}}$

2.2

- $n - 1 = 24$

2.3

- $\text{ME} = 2.06 \times \dfrac{10}{\sqrt{25}} = 2.06 \times 2 = 4.12$

3.1 B

- t^*.

3.2 B

- $n - 1$.

3.3

(a)

- $\dfrac{12}{\sqrt{36}} = 2$

(b)

- $\text{ME} = 2.03 \times 2 = 4.06$

3.4

(a)

- the dotplot is roughly symmetric with no outliers or strong skew, so a normal population is plausible

(b)

- one-sample t interval, $\text{df} = 11$: $\bar{x} \pm t^* \dfrac{s}{\sqrt{n}}$:

$$\bar{x} \pm t^* \frac{s}{\sqrt{n}} = 10.5 \pm 2.201 \left(\frac{1.09}{\sqrt{12}} \right)$$

- $= 10.5 \pm 2.201(0.315) = 10.5 \pm 0.69$ hours
- interval (**9**.**81**, **11**.**19**) hours

(c)

- no: 12 hours lies above the whole interval, so it is not a plausible value for the mean