Solutions

Marking: **M1** a correct method, **A1** the correct answer, **B1** an independent mark.

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

2.1

normal cdf with $\mu = 50$, $\sigma = 4$; $\mathbf{0.933}$

2.2

$0.9332 - 0.1587 = \mathbf{0.775}$

2.3

$P(X < k) = 0.9$; inverse normal; $k = \mathbf{55.1}$

3.1

(a) $P(M > 165) = \mathbf{0.106}$

(b) $P(M < 130) = 0.0478$; $400 \times 0.0478 = \mathbf{19.1}$ (accept 19)

(c) $P(M < m) = 0.95$; $m = \mathbf{170}$ g (169.7)

3.2

(a) z-values -0.8416 and 1.2816; $\dfrac{20 - \mu}{\sigma} = -0.8416$ and $\dfrac{30 - \mu}{\sigma} = 1.2816$

(b) $\sigma = \mathbf{4.71}$; $\mu = \mathbf{24.0}$

(c) normal cdf with $\mu = 23.96$, $\sigma = 4.710$; $\mathbf{0.413}$