Solutions

Award method and answer marks as indicated; accept equivalent correct methods.

2.1

- Add 7: $4x = 20$; divide by 4: $x = 5$.

2.2

- Divide by 3: $x + 2 = 7$; subtract 2: $x = 5$.

2.3

- Add 4, then divide by 5: $x = (y + 4)/5$.

2.4

- Add: $2a = 16$, so $a = 8$. Substitute: $b = 3$.

3.1

(a)

- $2a + c = 31$ **and** $a + 2c = 26$.

(b)

- Double the second: $2a + 4c = 52$. Subtract the first: $3c = 21$, so $c = 7$. Then $2a = 24$ and $a = 12$ **yuan**.

(c)

- $c = 7$ **yuan**. Checks: $2(12) + 7 = 31$ and $12 + 2(7) = 26$.

3.2

(a)

- $n + 2p = 19$ and $2n + p = 26$.
- Eliminate to obtain $3p = 12$, so $p = \mathbf{4}$, $n = \mathbf{11}$ yuan.
- Check: $11 + 8 = 19$ and $22 + 4 = 26$.

(b)

- Subtract the fixed charge: $3d = C - 8$.
- Thus $d = (\mathbf{C} - \mathbf{8})/\mathbf{3}$.
- At $C = 29$, $d = (29 - 8)/3 = \mathbf{7}$ km.

3.3

- Expand: $5x - 10 = 3x + 4$.
- Collect x terms on one side: $2x = 14$.
- $x = \mathbf{7}$.

3.4

- Angles in a triangle add to 180°: $x + 2x + x + 20 = 180$.
- $4x = 160$, so $x = 40$.
- The angles are 40°, 80° and 60°; the largest is **80**°.