

## 1 Algebra

$$\begin{aligned} \text{(a)} \quad \frac{x}{z} + 5 &= xz \\ x &= \frac{5z}{z^2 - 1} \end{aligned}$$

$$\begin{aligned} \text{(b)} \quad \frac{x}{100} &= x + 6 \\ x &= -\frac{200}{33} \end{aligned}$$

$$\begin{aligned} \text{(c)} \quad z(x - z) &= x - z \\ x &= z \end{aligned}$$

$$\begin{aligned} \text{(d)} \quad x + 10 &= 3x \\ x &= 5 \end{aligned}$$

$$\begin{aligned} \text{(e)} \quad \frac{x}{8} + 1 &= x - z \\ x &= \frac{8z}{7} + \frac{8}{7} \end{aligned}$$

$$\begin{aligned} \text{(f)} \quad \frac{x}{z} + z &= x - 1 \\ x &= \frac{z(z + 1)}{z - 1} \end{aligned}$$

$$\begin{aligned} \text{(g)} \quad \frac{x}{3} - z &= x - 7 \\ x &= -\frac{3z}{2} + \frac{21}{2} \end{aligned}$$

$$\begin{aligned} \text{(h)} \quad x + 2z &= xz \\ x &= \frac{2z}{z - 1} \end{aligned}$$

$$\begin{aligned} \text{(i)} \quad \frac{x}{2} - y &= 2x \\ x &= -\frac{2y}{3} \end{aligned}$$

$$\begin{aligned} \text{(j)} \quad x - z + 3 &= 2x \\ x &= -z + 3 \end{aligned}$$

$$\begin{aligned} \text{(k)} \quad 10x + 1 &= 6x \\ x &= -\frac{1}{4} \end{aligned}$$

$$\begin{aligned} \text{(l)} \quad 2x + 4 &= x + 1 \\ x &= -3 \end{aligned}$$

$$\begin{aligned} \text{(m)} \quad \frac{x}{2} - 2 &= x + z \\ x &= -2z - 4 \end{aligned}$$

$$\begin{aligned} \text{(n)} \quad x + y + 8 &= 2x \\ x &= y + 8 \end{aligned}$$

$$\begin{aligned} \text{(o)} \quad 2x - 1 &= x + 5 \\ x &= 6 \end{aligned}$$

## Answers

### 2 Algebra

(a)  $x = \frac{5z}{z^2 - 1}$

(b)  $x = -\frac{200}{33}$

(c)  $x = z$

(d)  $x = 5$

(e)  $x = \frac{8z}{7} + \frac{8}{7}$

(f)  $x = \frac{z(z+1)}{z-1}$

(g)  $x = -\frac{3z}{2} + \frac{21}{2}$

(h)  $x = \frac{2z}{z-1}$

(i)  $x = -\frac{2y}{3}$

(j)  $x = -z + 3$

(k)  $x = -\frac{1}{4}$

(l)  $x = -3$

(m)  $x = -2z - 4$

(n)  $x = y + 8$

(o)  $x = 6$