

## Solving Matrix Equations (Free Variables)

### 1 Matrices with parametric answers

$$\begin{aligned} 2x - 3y + 6z &= 14 \\ x + y - 2z &= -3 \\ 4x - 6y + 12z &= 28 \end{aligned}$$

$$\begin{aligned} x - 1y - 1z &= 2 \\ 2x - y - 3z &= 6 \\ 1x - 2z &= 4 \end{aligned}$$

$$\begin{aligned} x - 1y + 2z &= 3 \\ 1x + 2y - 1z &= -3 \\ 2y - 2z &= 1 \end{aligned}$$

#### Answers

1.  $x = 1;$   
 $y = 2t - 4;$   
 $z = t$
2.  $x = 2t + 4;$   
 $y = t + 2;$   
 $z = t$
3.  $x = (-2t + 7)/2;$   
 $y = (2t + 1)/2;$   
 $z = t$