

P525

3-9 odds

19-25 odds

60, 61, 64, 68

$$3) \begin{aligned} X + 2y &= 5 \\ y &= -2 \end{aligned}$$

$$\begin{aligned} X + 2(-2) &= 5 \\ X - 4 &= 5 \\ X &= 9 \end{aligned}$$

$$\boxed{(9, -2)}$$

$$5) \begin{aligned} 3X + y &= 20 \Rightarrow y = -3X + 20 \\ X - 2y &= 10 \end{aligned}$$

$$\begin{aligned} X - 2(-3X + 20) &= 10 \\ X + 6X - 40 &= 10 \\ 7X - 40 &= 10 \\ 7X &= 50 \\ X &= 50/7 \end{aligned}$$

$$\begin{aligned} y &= -3\left(\frac{50}{7}\right) + 20 \\ y &= -10/7 \end{aligned}$$

$$\boxed{\left(\frac{50}{7}, -\frac{10}{7}\right)}$$

$$7.) \begin{aligned} 2X - 3y &= -7 \\ 4X + 5y &= 8 \rightarrow 4X = -5y + 8 \\ X &= -5/4y + 2 \end{aligned}$$

$$2\left(-\frac{5}{4}y + 2\right) - 3y = -7$$

$$\begin{aligned} -5/2y + 4 - 3y &= -7 \\ -11/2y &= -11 \\ y &= 2 \end{aligned} \quad \begin{aligned} X &= -5/4(2) + 2 \\ X &= -1/2 \end{aligned}$$

$$\boxed{\left(-\frac{1}{2}, 2\right)}$$

$$\text{or } \begin{aligned} (2X - 3y = -7) \quad -4X + 6y &= 14 \\ 4X + 5y &= 8 \\ \hline 11y &= 22 \\ y &= 2 \end{aligned}$$

$$\begin{aligned} 2X - 3(2) &= -7 \\ 2X - 6 &= -7 \\ 2X &= -1 \\ X &= -1/2 \end{aligned}$$

$$9.) \begin{aligned} X - 3y &= 6 \rightarrow X = 3y + 6 \\ -2X + 4y &= 4 \end{aligned} \quad \begin{aligned} -2(3y + 6) + 4y &= 4 \\ -6y - 12 + 4y &= 4 \\ -12 &= 4 \end{aligned}$$

$$\boxed{\text{no solution}}$$

$$\begin{array}{r}
 19.) \quad X - y = 10 \\
 + \quad X + y = 6 \\
 \hline
 2X = 16 \\
 X = 8
 \end{array}$$

$$\begin{array}{r}
 8 + y = 6 \\
 y = -2
 \end{array}$$

$$\boxed{(8, -2)}$$

$$\begin{array}{r}
 21) \quad 3X - 2y = 8 \\
 5X + 4y = 28
 \end{array}$$

$$\begin{array}{r}
 \rightarrow (2) \quad 6X - 4y = 16 \\
 + \quad 5X + 4y = 28 \\
 \hline
 11X = 44 \\
 X = 4
 \end{array}$$

$$\begin{array}{r}
 5(4) + 4y = 28 \\
 20 + 4y = 28 \\
 4y = 8 \\
 y = 2
 \end{array}$$

$$\boxed{(4, 2)}$$

$$\begin{array}{r}
 23) \quad 2X - 4y = -10 \\
 -3X + 6y = -21
 \end{array}$$

$$\begin{array}{r}
 (3) \quad 6X - 12y = -30 \\
 (2) \quad -6X + 12y = -42 \\
 \hline
 0 = -72
 \end{array}$$

$$\boxed{\text{no solution}}$$

$$\begin{array}{r}
 25) \quad 2X - 3y = 5 \\
 -6X + 9y = -15
 \end{array}$$

$$\begin{array}{r}
 (3) \quad 6X - 9y = 15 \\
 -6X + 9y = -15 \\
 \hline
 0 = 0
 \end{array}$$

$$\boxed{\text{many solutions}}$$

60.) false. it has no solutions. * answers to justify will vary *

$$\begin{array}{r} \text{let) } 2x - 3y = 12 \\ x + 2y = -1 \end{array} \quad \begin{array}{r} 2x - 3y = 12 \\ (-2) \quad -2x - 4y = 2 \\ \hline -7y = 14 \\ y = -2 \end{array} \quad \boxed{C}$$

64.) E

$$\begin{array}{r} \text{68.) } x^2 + y^2 = 1 \\ x^2 - y^2 = 1 \\ \hline 2x^2 = 2 \\ x^2 = 1 \\ x = 1 \text{ or } x = -1 \end{array} \quad \begin{array}{r} \text{if } x = 1 \\ 1^2 + y^2 = 1 \\ 1 + y^2 = 1 \\ y^2 = 0 \\ y = 0 \end{array} \quad \begin{array}{r} \text{if } x = -1 \\ (-1)^2 + y^2 = 1 \\ 1 + y^2 = 1 \\ y^2 = 0 \\ y = 0 \end{array}$$

$(1, 0)$ $(-1, 0)$

$\boxed{(\pm 1, 0)}$