



Pair of Linear Equations in Two variables Ex 3.3 Q30

Answer :

The given equations are:

$$x + y = 5xy \dots (i)$$

$$3x + 2y = 13xy \dots (ii)$$

Multiply equation (i) by 2 and subtract (ii) from (i), we get

$$2x + 2y = 10xy$$

$$\underline{3x + 2y = 13xy}$$

$$-x = -3xy$$

$$\Rightarrow y = \frac{1}{3}$$

Put the value of y in equation (i), we get

$$x + \frac{1}{3} = 5x \times \frac{1}{3}$$

$$\Rightarrow \frac{2x}{3} = \frac{1}{3}$$

$$\Rightarrow x = \frac{1}{2}$$

Hence the value of $\boxed{x = \frac{1}{2}}$ and $\boxed{y = \frac{1}{3}}$

Pair of Linear Equations in Two variables Ex 3.3 Q31

Answer :

The given equations are:

$$x + y = 2xy \dots (i)$$

$$\frac{x - y}{xy} = 6 \dots (ii)$$

$$x - y = 6xy$$

Add both equations we get

$$x + y = 2xy$$

$$\underline{x - y = 6xy}$$

$$2x = 8xy$$

$$\Rightarrow y = \frac{1}{4}$$

Put the value of y in equation (i), we get

$$x + \frac{1}{4} = 2x \times \frac{1}{4}$$

$$\Rightarrow \frac{-x}{2} = \frac{1}{4}$$

$$\Rightarrow x = -\frac{1}{2}$$

Hence the value of $x = -\frac{1}{2}$ and $y = \frac{1}{4}$.

Answer :

The given equations are:

$$2(3u - v) = 5uv$$

$$6u - 2v = 5uv \quad \dots(i)$$

$$2(u + 3v) = 5uv$$

$$2u + 6v = 5uv \quad \dots(ii)$$

Multiply equation (i) by 3 and add both equations, we get

$$18u - 6v = 15uv$$

$$\underline{2u + 6v = 5uv}$$

$$20u = 20uv$$

$$\Rightarrow v = 1$$

Put the value of v in equation (i), we get

$$6u - 2 \times 1 = 5u \times 1$$

$$\Rightarrow u = 2$$

Hence the value of $\boxed{u = 2}$ and $\boxed{v = 1}$.

***** END *****