



CLASS NOTES-ANSWERS**EXERCISE 4.2**

1. Give first the step you will use to separate the variable and then solve the equation:

(a) $x - 1 = 0$

(b) $x + 1 = 0$

(c) $x - 1 = 5$

(d) $x + 6 = 2$

(e) $y - 4 = -7$

(f) $y - 4 = 4$

(g) $y + 4 = 4$

(h) $y + 4 = -4$

Answer:

(a) $x - 1 = 0$

Adding one to both sides of the equation we get,

$$x - 1 + 1 = 0 + 1$$

$$x = 1$$



(b) $x + 1 = 0$

Subtracting one from both sides of the equation we get,

$$x + 1 - 1 = 0 - 1$$

$$x = -1$$

(c) $x - 1 = 5$

Adding one to both sides of the equation we get,

$$x - 1 + 1 = 5 + 1$$

$$x = 6$$

(d) $x + 6 = 2$

Subtracting 6 from both sides of the equation we get,



$$x + 6 - 6 = 2 - 6$$

$$x = -4$$

e) $y - 4 = -7$

Adding 4 to both sides of the equation we get,

$$y - 4 + 4 = -7 + 4$$

$$y = -3$$

(f) $y - 4 = 4$

Adding 4 to both sides of the equation we get,

$$y - 4 + 4 = 4 + 4$$

$$y = 8$$

(g) $y + 4 = 4$

Subtracting 4 from both sides of the equation we get,

$$y + 4 - 4 = 4 - 4$$

$$y = 0$$

(h) $y + 4 = -4$

Subtracting 4 from both sides of the equation we get,

$$y + 4 - 4 = -4 - 4$$

$$y = -8$$

2. Give first the step you will use to separate the variable and then solve the equation:

(a) $3l = 42$

(b) $\frac{b}{2} = 6$

(c) $\frac{p}{7} = 4$

(d) $4x = 25$

(e) $8y = 36$

(f) $\frac{z}{3} = \frac{5}{4}$

(g) $\frac{a}{5} = \frac{7}{15}$

(h) $20t = -10$

Answer:



(a) $3l = 42$

Divide both the sides by 3 we get,

$$\frac{3l}{3} = \frac{42}{3}$$

$$l = 14$$

(b) $\frac{b}{2} = 6$

Multiplying both sides by 2,

$$\frac{b}{2} \times 2 = 6 \times 2$$

$$b = 12$$

(c) $\frac{p}{7} = 4$

Multiplying both sides by 7,

$$\frac{p}{7} \times 7 = 4 \times 7$$

$$p = 28$$

(d) $4x = 25$

Dividing both the sides by 4 we get,

$$\frac{4x}{4} = \frac{25}{4}$$

$$x = \frac{25}{4}$$

(e) $8y = 36$

Dividing both the sides by 8 we get,

$$\frac{8y}{8} = \frac{36}{8}$$

$$y = \frac{9}{2}$$

(f) $\frac{z}{3} = \frac{5}{4}$

Multiplying both sides by 3 we get,





$$\frac{z}{3} \times 3 = \frac{5}{4} \times 3$$

$$z = \frac{15}{4}$$

$$(g) \frac{a}{5} = \frac{7}{15}$$

Multiplying both sides by 5 we get,

$$\frac{a}{5} \times 5 = \frac{7}{15} \times 5$$

$$a = \frac{7}{3}$$

$$(h) 20t = -10$$

Dividing both sides by 20 we get,

$$\frac{20t}{20} = \frac{-10}{20}$$

$$t = \frac{-1}{2}$$

3. Give the steps you will use to separate the variable and then solve the equation:

$$(a) 3n - 2 = 46$$

$$(b) 5m + 7 = 17$$

$$(c) \frac{20p}{3} = 40$$

$$(d) \frac{3p}{10} = 6$$

Answer:

$$(a) 3n - 2 = 46$$

Adding 2 to both sides of the equation, we get

$$3n - 2 + 2 = 46 + 2$$

$$3n = 48$$

Dividing both the sides by 3 we get,

$$\frac{3n}{3} = \frac{48}{3}$$

$$n = 16$$



(b) $5m + 7 = 17$

Subtracting 7 from both sides of the equation, we get

$$5m + 7 - 7 = 17 - 7$$

$$5m = 10$$

Dividing both the sides by 5 we get,

$$\frac{5m}{5} = \frac{10}{5}$$

$$m = 2$$

(c) $\frac{20p}{3} = 40$

Multiplying both the sides by 3 we get,

$$\frac{20p}{3} \times 3 = 40 \times 3$$

$$20p = 120$$

Dividing both the sides by 20 we get,

$$\frac{20p}{20} = \frac{120}{20}$$

$$p = 6$$

(d) $\frac{3p}{10} = 6$

Multiplying both the sides by 10 we get,

$$\frac{3p}{10} \times 10 = 6 \times 10$$

$$3p = 60$$

Dividing both the sides by 3 we get,

$$\frac{3p}{3} = \frac{60}{3}$$

$$p = 20$$

4. Solve the following equations:



(a) $10p = 100$

(b) $10p + 10 = 100$

(c) $\frac{p}{4} = 5$

(d) $\frac{-p}{3} = 5$

(e) $\frac{3p}{4} = 6$

(f) $3s = -9$

(g) $3s + 12 = 0$

(h) $3s = 0$

(i) $2q = 6$

(j) $2q - 6 = 0$

(k) $2q + 6 = 0$

(l) $2q + 6 = 12$

Answer:

(a) $10p = 100$

Dividing both the sides by 10 we get,

$$\frac{10p}{10} = \frac{100}{10}$$

$$p = 10$$

(b) $10p + 10 = 100$

Subtracting 10 from both sides we get,

$$10p + 10 - 10 = 100 - 10$$

$$10p = 90$$

Dividing both the sides by 10 we get,

$$\frac{10p}{10} = \frac{90}{10}$$

$$p = 9$$

(c) $\frac{p}{4} = 5$

Multiplying both the sides by 4 we get,

$$\frac{p}{4} \times 4 = 5 \times 4$$

$$p = 20$$

(d) $\frac{-p}{3} = 5$

Multiplying both the sides by 3 we get,





$$\frac{-p}{3} \times 3 = 5 \times 3$$

$$-p = 15$$

$$p = -15$$

(e) $\frac{3p}{4} = 6$

Multiplying both the sides by 4,

$$\frac{3p}{4} \times 4 = 6 \times 4$$

$$3p = 24$$

Dividing both the sides by 3 we get,

$$\frac{3p}{3} = \frac{24}{3}$$

$$p = 8$$

(f) $3s = -9$

Dividing both the sides by 3,

$$\frac{3s}{3} = \frac{-9}{3}$$

$$s = -3$$

(g) $3s + 12 = 0$

Subtracting 12 from both the sides of the equation we get,

$$3s + 12 - 12 = 0 - 12$$

$$3s = -12$$

Dividing both the sides by 3 we get,

$$\frac{3s}{3} = \frac{-12}{3}$$

$$s = -4$$

(h) $3s = 0$





Dividing both the sides by 3 we get,

$$\frac{3s}{3} = \frac{0}{3}$$

$$s = 0$$

(i) $2q = 6$

Dividing both the sides by 2 we get,

$$\frac{2q}{2} = \frac{6}{2}$$

$$q = 3$$

(j) $2q - 6 = 0$

Adding 6 to both sides of the equation we get,

$$2q - 6 + 6 = 0 + 6$$

$$2q = 6$$

Dividing both the sides by 2 we get,

$$\frac{2q}{2} = \frac{6}{2}$$

$$q = 3$$

(k) $2q + 6 = 0$

Subtracting 6 from both the sides of the equation we get,

$$2q + 6 - 6 = 0 - 6$$

$$2q = -6$$

Dividing both the sides by 2 we get,

$$\frac{2q}{2} = \frac{-6}{2}$$

$$q = -3$$

(l) $2q + 6 = 12$





Subtracting 6 from both the sides of the equation we get,

$$2q + 6 - 6 = 12 - 6$$

$$2q = 6$$

Dividing both the sides by 2 we get

$$\frac{2q}{2} = \frac{6}{2}$$

$$q = 3$$

