

Key Answer

Name:

Worksheet(1)

Grade:7(A, B)

Subject : Math (solving linear equations)

Date :

Exercise(1): solve the following linear equations :

$$1) m + 6 = 8$$

$$\begin{array}{r} + 6 = 8 \\ \underline{-6 \quad -6} \end{array}$$

$$m = 2$$

$$2) b - 5 = -12$$

$$\begin{array}{r} - 5 = -12 \\ \underline{+5 \quad +5} \end{array}$$

$$b = -7$$

$$3) \frac{4f}{4} = \frac{-20}{4}$$

$$f = -5$$

$$4) 3m + 12 = 36$$

$$\begin{array}{r} 3m + 12 = 36 \\ \underline{-12 \quad -12} \\ 3m = 24 \\ \underline{3 \quad 3} \end{array}$$

$$m = 8$$

$$5) 2m - 4 = -7$$

$$\begin{array}{r} 2m - 4 = -7 \\ \underline{+4 \quad +4} \\ 2m = -3 \\ \underline{2 \quad 2} \end{array}$$

$$m = -1\frac{1}{2} = -1.5$$

$$6) \frac{b}{2} + 4 = -10$$

$$\begin{array}{r} \frac{b}{2} + 4 = -10 \\ \underline{-4 \quad -4} \end{array}$$

$$\frac{b}{2} = -14$$

$$b \times 1 = (2 \times -14) \Rightarrow b = -28$$

$$7) -9 + \frac{b}{3} = 9$$

$$\begin{array}{r} -9 + \frac{b}{3} = 9 \\ \underline{+9 \quad +9} \end{array}$$

$$\frac{b}{3} = 18$$

$$b = 18 \times 3 = 54$$

$$8) 5n = 3n + 2$$

$$\begin{array}{r} 5n = 3n + 2 \\ \underline{-3n \quad -3n} \end{array}$$

$$\frac{2n}{2} = \frac{2}{2}$$

$$n = 1$$

$$9) 8n - 6 = 7n$$

$$\begin{array}{r} 8n - 6 = 7n \\ \underline{-7n \quad -7n} \end{array}$$

$$n - 6 = 0$$

$$\underline{+6 \quad +6}$$

$$n = 6$$

$$10) \quad 5d = 2d - 9$$

$$\quad -2d \quad +2d$$

$$\hline 3d = -9$$

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

$$\boxed{d = -3}$$

$$11) \quad 9d = 13d - 16$$

$$\quad -9d \quad -9d$$

$$\hline 0 = 4d - 16$$

$$+16 \quad +16$$

$$\hline 16 = 4d$$

$$\rightarrow \boxed{d = 4}$$

$$12) \quad 2(x - 3) = 2$$

$$2x - 6 = 2$$

$$\quad +6 \quad +6$$

$$\hline 2x = 8$$

$$\frac{2x}{2} = \frac{8}{2}$$

$$\boxed{x = 4}$$

$$13) \quad 5(2 - b) = 15$$

$$10 - 5b = 15$$

$$\quad -10 \quad -10$$

$$\hline -5b = 5$$

$$\rightarrow \boxed{b = -1}$$

$$14) \quad 4(e - 6) = -8$$

$$4e - 24 = -8$$

$$\quad +24 \quad +24$$

$$\hline 4e = 16$$

$$\Rightarrow \boxed{e = 4}$$

$$15) \quad 2(m - 1) = 4(m - 2)$$

$$2m - 2 = 4m - 8$$

$$\quad -2m \quad -2m$$

$$\hline -2 = 2m - 8$$

$$\quad +8 \quad +8$$

$$\hline 6 = 2m$$

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

$$\rightarrow \boxed{m = 3}$$

$$16) \quad 4(2b - 1) = 3(b + 2)$$

$$8b - 4 = \cancel{3b} + 6$$

$$\underline{-3b}$$

$$\underline{-3b}$$

$$5b - 4 = 6$$

$$\underline{+4 \quad +4}$$

$$\frac{5b}{5} = \frac{10}{5} \Rightarrow b = 2$$

$$b = 2$$

$$17) \quad 2(10 - 2n) = 8(4 - n)$$

$$20 - 4n = 32 - \cancel{8n}$$

$$\underline{+8n}$$

$$\underline{+8n}$$

$$20 + 4n = 32$$

$$\underline{-20}$$

$$\underline{-20}$$

$$\frac{4n}{4} = \frac{12}{4} \Rightarrow n = 3$$

$$n = 3$$

$$18) \quad \frac{m}{3} = 6$$

$$\frac{m}{3} = \frac{6}{1}$$

$$m \cdot 1 = 3 \cdot 6$$

$$m = 18$$

$$19) \quad 7 = \frac{b}{2} + 5$$

$$\underline{-5 \quad -5}$$

$$\frac{2}{1} = \frac{b}{2}$$

$$2 \cdot 2 = b \cdot 1$$

$$\Rightarrow b = 4$$

$$20) \frac{2}{3}b = 6$$

$$\frac{\cancel{3}^1}{\cancel{2}_1} \times \frac{\cancel{2}^1}{\cancel{3}_1} b = \frac{\cancel{6}^3}{\cancel{1}_1} \times \frac{\cancel{3}^1}{\cancel{2}_1}$$

$$b = 9$$

$$21) 3 = \frac{-2b}{5}$$

$$\frac{\cancel{5}^1}{\cancel{-2}_1} \times 3 = \frac{\cancel{-2}^1}{\cancel{5}_1} b \times \frac{\cancel{5}^1}{\cancel{-2}_1}$$

$$b = \frac{15}{-2}$$

$$b = -7\frac{1}{2} = -7.5$$

Exercise(2):

Construct an equation from the information given in each question and then solve it.

1) I think of a number, multiply it by 5 and add 6. The answer is 41.

What is the number?

$$b \times 5 + 6 = 41$$

$$5b + 6 = 41$$

$$5b + \cancel{6} = 41$$

$$\underline{-6 \quad -6}$$

$$\frac{5b}{5} = \frac{35}{5} \rightarrow b = 7$$

2) I think of a number, add 7 and then multiply everything by 12.

The answer is 12.

What is the number?

$$(m + 7) \times 12 = 12$$

$$12m + 84 = 12$$

$$12m + \cancel{84} = 12$$

$$\underline{-84 \quad -84}$$

$$\frac{12m}{12} = \frac{-72}{12}$$

$$m = -6$$