



Powers Ex 2.2 Q8

**Answer :**

Expressing in fraction form, we get:

$$5^{-1} = 1/5 \text{ (using the property } a^{-1} = 1/a)$$

and

$$(-7)^{-1} = -1/7 \text{ (using the property } a^{-1} = 1/a).$$

We have to find a number  $x$  such that

$$\frac{1}{5}x = \frac{-1}{7}$$

Multiplying both sides by 5, we get:

$$x = -\frac{5}{7}$$

Hence,  $5^{-1}$  should be multiplied by  $-5/7$  to obtain  $(-7)^{-1}$ .

Powers Ex 2.2 Q9

**Answer :**

Expressing in fractional form, we get:

$$(1/2)^{-1} = 2, \quad \text{---> } (a^{-1} = 1/a)$$

and

$$(-4/7)^{-1} = -7/4 \quad \text{---> } (a^{-1} = 1/a)$$

We have to find a number  $x$  such that

$$2x = -\frac{7}{4}$$

Dividing both sides by 2, we get:

$$x = -\frac{7}{8}$$

Hence,  $(1/2)^{-1}$  should be multiplied by  $-7/8$  to obtain  $(-4/7)^{-1}$ .

Powers Ex 2.2 Q10

**Answer :**

Expressing in fractional form, we get:

$$(-15)^{-1} = -1/15, \quad \rightarrow (a^{-1} = 1/a)$$

and

$$(-5)^{-1} = -1/5 \quad \rightarrow (a^{-1} = 1/a)$$

We have to find a number  $x$  such that

$$-\frac{1}{15} \div x = -\frac{1}{5}$$

Solving this equation, we get:

$$\begin{aligned} -\frac{1}{15} \times \frac{1}{x} &= -\frac{1}{5} \\ -\frac{1}{15x} &= -\frac{1}{5} \\ \frac{-1}{-15x} &= x \\ \therefore x &= \frac{1}{3} \end{aligned}$$

Hence,  $(-15)^{-1}$  should be divided by  $1/3$  to obtain  $(-5)^{-1}$ .

Powers Ex 2.2 Q11

**Answer :**

Expressing as a positive exponent, we have:

$$\begin{aligned} \left(\frac{5}{3}\right)^{-2} &= \frac{1}{(5/3)^2} \quad \rightarrow (a^{-1} = 1/a) \\ &= \frac{1}{25/9} \quad \rightarrow ((a/b)^n = (a^n)/(b^n)) \\ &= \frac{9}{25} \end{aligned}$$

and

$$(7/3)^{-1} = 3/7. \quad \rightarrow (a^{-1} = 1/a)$$

We have to find a number  $x$  such that

$$\frac{9}{25} \times x = \frac{3}{7}$$

Multiplying both sides by  $25/9$ , we get:

$$x = \frac{3}{7} \times \frac{25}{9} = \frac{1}{7} \times \frac{25}{3} = \frac{25}{21}$$

Hence,  $(5/3)^{-2}$  should be multiplied by  $25/21$  to obtain  $(7/3)^{-1}$ .

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