Powers Ex 2.2 Q8

Answer :

Expressing in fraction form, we get:

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

and

$(-7)^{-1} = -1/7$ (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:

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

and

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

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:

$(-15)^{-1} = -1/15$, ---> $(a^{-1} = 1/a)$

and

$(-5)^{-1} = -1/5$ ---> $(a^{-1} = 1/a)$

We have to find a number x such that

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

Solving this equation, we get:

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

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

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

$$\therefore x = \frac{1}{3}$$

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:

$$\left(\frac{5}{3}\right)^{-2} = \frac{1}{(5/3)^2}$$ ---> $(a^{-1} = 1/a)$

$$= \frac{1}{25/9}$$ ---> $((a/b)^n = (a^n)/(b^n))$

$$= \frac{9}{25}$$

and

$(7/3)^{-1} = 3/7$. ---> $(a^{-1} = 1/a)$

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 $(7/3)^{-1}$.

********** END **********