Cubes and Cubes Roots Ex 4.2 Q4

Answer :

(i)

$\because \left(\frac{m}{n}\right)^3 = \frac{m^3}{n^3}$

$\therefore \left(\frac{7}{9}\right)^3 = \frac{7^3}{9^3} = \frac{7\times7\times7}{9\times9\times9} = \frac{343}{729}$

(ii)

$\because \left(-\frac{m}{n}\right)^3 = -\frac{m^3}{n^3}$

$\therefore \left(-\frac{8}{11}\right)^3 = -\left(\frac{8}{11}\right)^3 = -\left(\frac{8^3}{11^3}\right) = -\left(\frac{8\times8\times8}{11\times11\times11}\right) = -\frac{512}{1331}$

(iii)

$\because \left(\frac{m}{n}\right)^3 = \frac{m^3}{n^3}$

$\therefore \left(\frac{12}{7}\right)^3 = \frac{12^3}{7^3} = \frac{12\times12\times12}{7\times7\times7} = \frac{1728}{343}$

(iv)

$\because \left(-\frac{m}{n}\right)^3 = -\frac{m^3}{n^3}$

$\therefore \left(-\frac{13}{8}\right)^3 = -\left(\frac{13}{8}\right)^3 = -\left(\frac{13^3}{8^3}\right) = -\left(\frac{13\times13\times13}{8\times8\times8}\right) = -\frac{2197}{512}$

(v)
We have:

$2\frac{2}{5} = \frac{12}{5}$

Also, $\left(\frac{m}{n}\right)^3 = \frac{m^3}{n^3}$

$\therefore \left(\frac{12}{5}\right)^3 = \frac{12^3}{5^3} = \frac{12\times12\times12}{5\times5\times5} = \frac{1728}{125}$

(vi)
We have:

$3\frac{1}{4} = \frac{13}{4}$

Also, $\left(\frac{m}{n}\right)^3 = \frac{m^3}{n^3}$
$\therefore \left(\frac{13}{4}\right)^3 = \frac{13^3}{4^3} = \frac{13\times13\times13}{4\times4\times4} = \frac{2197}{64}$

(vii)
We have:

$0.3 = \frac{3}{10}$

Also, $\left(\frac{m}{n}\right)^3 = \frac{m^3}{n^3}$

$\therefore \left(\frac{3}{10}\right)^3 = \frac{3^3}{10^3} = \frac{3\times3\times3}{10\times10\times10} = \frac{27}{1000} = 0.027$

(viii)
We have:

$1.5 = \frac{15}{10}$

Also, $\left(\frac{m}{n}\right)^3 = \frac{m^3}{n^3}$

$\therefore \left(\frac{15}{10}\right)^3 = \frac{15^3}{10^3} = \frac{15\times15\times15}{10\times10\times10} = \frac{3375}{1000} = 3.375$

(ix)
We have:

$0.08 = \frac{8}{100}$

Also, $\left(\frac{m}{n}\right)^3 = \frac{m^3}{n^3}$

$\therefore \left(\frac{8}{100}\right)^3 = \frac{8^3}{100^3} = \frac{8\times8\times8}{100\times100\times100} = \frac{512}{1000000} = 0.000512$

(x)
We have:

$2.1 = \frac{21}{10}$

Also, $\left(\frac{m}{n}\right)^3 = \frac{m^3}{n^3}$

$\therefore \left(\frac{21}{10}\right)^3 = \frac{21^3}{10^3} = \frac{21\times21\times21}{10\times10\times10} = \frac{9261}{1000} = 9.261$

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