Positive Integral Exponents of a Rational Number

A. Choose the Correct Answer:

1. The value of $\left(\frac{2}{3}\right)^2$ is:

a) $\frac{4}{9}$ b) $\frac{2}{9}$

c) $\frac{9}{4}$ d) $\frac{3}{2}$

2. $\left(\frac{5}{7}\right)^3$ is equal to:

a) $\frac{125}{343}$ b) $\frac{15}{21}$

c) $\frac{35}{343}$ d) $\frac{25}{49}$

3. The value of $\left(\frac{3}{4}\right)^1$ is:

a) $\frac{3}{4}$ b) $\frac{4}{3}$

c) $\frac{1}{3}$ d) $\frac{1}{4}$

4. $\left(\frac{2}{5}\right)^4$ is:

a) $\frac{16}{25}$ b) $\frac{8}{25}$

c) $\frac{16}{625}$ d) $\frac{8}{125}$

5. $\left(\frac{7}{9}\right)^2$ is equal to:

a) $\frac{14}{81}$ b) $\frac{49}{81}$

c) $\frac{49}{72}$ d) $\frac{63}{81}$

B. Write the Missing Terms to Complete the Sentences:

1. $\left(\frac{a}{b}\right)^n = \frac{a^n}{\ldots}$

2. $\left(\frac{3}{5}\right)^2 =$ _____ $\frac{\ldots}{25}$

3. $\left(\frac{1}{2}\right)^3 =$ _____

4. Positive integral exponents represent repeated _____

5. $\left(\frac{2}{7}\right)^1 =$ _____

C. Figure out the answers to these questions:

1. Find the value of $\left(\frac{4}{5}\right)^3$
2. Simplify $\left(\frac{2}{9}\right)^2$ and write it as a fraction
3. Calculate $\left(\frac{5}{8}\right)^2$
4. Find $\left(\frac{7}{11}\right)^3$
5. Evaluate $\left(\frac{1}{3}\right)^4$

D. Mark each sentence with a True (✓) or False (✗):

1. $\left(\frac{a}{b}\right)^n = \frac{a^n}{b^n}$ for any positive integer n. _____
2. $\left(\frac{2}{3}\right)^3 = \frac{2^3}{3^3}$. _____
3. $\left(\frac{5}{7}\right)^2 = \frac{5^2}{7^3}$. _____
4. $\left(\frac{1}{2}\right)^5 = \frac{1}{32}$. _____
5. Positive integral exponents represent division. _____

E. Challenge yourself with these questions:

1. Find the value of $\left(\frac{3}{7}\right)^3$
2. Simplify $\left(\frac{5}{6}\right)^2$ and express it as a fraction
3. Calculate $\left(\frac{2}{5}\right)^3$
4. Find the cube of $\left(\frac{4}{9}\right)$
5. Evaluate $\left(\frac{7}{8}\right)^2$