Name: ..... Class: .....

Exponents with fractional bases

Evaluate the following expressions

$\left(\frac{5}{6}\right)^3 =$

$=$

$=$

$\left(\frac{3}{4}\right)^4 =$

$=$

$=$

$\left(\frac{52}{97}\right)^0 =$

$=$

$=$

$\left(\frac{5}{3}\right)^5 =$

$=$

$=$

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

$=$

$=$

$\left(\frac{3}{8}\right)^2 =$

$=$

$=$

$\left(\frac{10}{4}\right)^1 =$

$=$

$=$

$\left(\frac{7}{9}\right)^2 =$

$=$

$=$

$\left(\frac{4}{7}\right)^2 =$

$=$

$=$

In each case, solve and tick **most** the correct answer.

$\left(\frac{10}{4}\right)^2 = ?$

- ☐ $\frac{25}{4}$
- ☐ $\frac{100}{16}$

$\left(\frac{3}{4}\right)^6 = ?$

- ☐ $\frac{729}{4,096}$
- ☐ $\frac{729}{4,069}$

$\left(\frac{3}{5}\right)^3 = ?$

- ☐ $\frac{27}{125}$
- ☐ $\frac{27}{150}$

$\left(\frac{5}{12}\right)^1 = ?$

- ☐ $\frac{12}{5}$
- ☐ $\frac{5}{12}$

$\left(\frac{2}{3}\right)^7 = ?$

- ☐ $\frac{128}{2,187}$
- ☐ $\frac{129}{2,187}$

$\left(\frac{6}{8}\right)^0 = ?$

- ☐ $\frac{6}{8}$
- ☐ 1

Solution

Name: ..... Class: .....

Exponents with fractional bases

Evaluate the following expressions

$\left(\frac{5}{6}\right)^3 = \frac{(5)^3}{(6)^3}$

$= \frac{5 \times 5 \times 5}{6 \times 6 \times 6}$

$= \frac{125}{216}$

$\left(\frac{3}{4}\right)^4 = \frac{(3)^4}{(4)^4}$

$= \frac{3 \times 3 \times 3 \times 3}{4 \times 4 \times 4 \times 4}$

$= \frac{81}{256}$

$\left(\frac{52}{97}\right)^0 = \frac{(52)^0}{(97)^0}$

$= \frac{1}{1}$

$= 1$

$\left(\frac{5}{3}\right)^5 = \frac{(5)^5}{(3)^5}$

$= \frac{5 \times 5 \times 5 \times 5 \times 5}{3 \times 3 \times 3 \times 3 \times 3}$

$= \frac{3{,}125}{243}$

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

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

$= \frac{1}{128}$

$\left(\frac{3}{8}\right)^2 = \frac{(3)^2}{(8)^2}$

$= \frac{3 \times 3}{8 \times 8}$

$= \frac{9}{64}$

$\left(\frac{10}{4}\right)^1 = \frac{(10)^1}{(4)^1}$

$= \frac{10}{4} = \frac{5}{2}$

$= \frac{5}{2}$

$\left(\frac{7}{9}\right)^2 = \frac{(7)^2}{(9)^2}$

$= \frac{7 \times 7}{9 \times 9}$

$= \frac{49}{81}$

$\left(\frac{4}{7}\right)^2 = \frac{(4)^2}{(7)^2}$

$= \frac{4 \times 4}{7 \times 7}$

$= \frac{16}{49}$

In each case, solve and tick the **most** correct answer.

$\left(\frac{10}{4}\right)^2 = ?$

- [x] $\frac{25}{4}$
- [ ] $\frac{100}{16}$

$\left(\frac{3}{4}\right)^6 = ?$

- [x] $\frac{729}{4{,}096}$
- [ ] $\frac{729}{4{,}069}$

$\left(\frac{3}{5}\right)^3 = ?$

- [x] $\frac{27}{125}$
- [ ] $\frac{27}{150}$

$\left(\frac{5}{12}\right)^1 = ?$

- [ ] $\frac{12}{5}$
- [x] $\frac{5}{12}$

$\left(\frac{2}{3}\right)^7 = ?$

- [x] $\frac{128}{2{,}187}$
- [ ] $\frac{129}{2{,}187}$

$\left(\frac{6}{8}\right)^0 = ?$

- [ ] $\frac{6}{8}$
- [x] 1