

Name:

Date: Score:

Evaluating Exponents

① $\left(\frac{5}{6}\right)^6 \times \left(\frac{5}{6}\right)^{-4}$

② $\left(\frac{7}{5}\right)^{-3} \times \left(\frac{7}{5}\right)^2$

③ $\left(-\frac{2}{3}\right)^{-3} \times \left(-\frac{2}{3}\right)^{-2}$

④ $\left\{\left(\frac{3}{2}\right)^{-2}\right\}^2$

⑤ $\left\{\left(\frac{1}{3}\right)^{-3} - \left(\frac{1}{3}\right)^{-3}\right\} \div \left(\frac{1}{4}\right)^{-3}$

⑥ $\left\{\left(\frac{4}{3}\right)^{-1} - \left(\frac{1}{4}\right)^{-1}\right\}^{-1}$

⑦ Find the value of x

a $\left(\frac{5}{3}\right)^{-4} \times \left(\frac{5}{3}\right)^{-5} = \left(\frac{5}{3}\right)^{3x}$

b $\left(\frac{2}{9}\right)^4 \times \left(\frac{2}{9}\right)^7 = \left(\frac{2}{9}\right)^{2x}$

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Answers

① $\left(\frac{5}{6}\right)^6 \times \left(\frac{5}{6}\right)^{-4}$

$$\frac{25}{36}$$

② $\left(\frac{7}{5}\right)^{-3} \times \left(\frac{7}{5}\right)^2$

$$\frac{5}{7}$$

③ $\left(-\frac{2}{3}\right)^3 \times \left(-\frac{2}{3}\right)^{-2}$

$$-\frac{243}{32}$$

④ $\left\{\left(\frac{3}{2}\right)^{-2}\right\}^2$

$$\frac{16}{81}$$

⑤ $\left\{\left(\frac{1}{3}\right)^{-3} - \left(\frac{1}{3}\right)^{-3}\right\} \div \left(\frac{1}{4}\right)^{-3}$

$$0$$

⑥ $\left\{\left(\frac{4}{3}\right)^{-1} - \left(\frac{1}{4}\right)^{-1}\right\}^{-1}$

$$-\frac{4}{13}$$

⑦

a $\left(\frac{5}{3}\right)^{-4} \times \left(\frac{5}{3}\right)^{-5} = \left(\frac{5}{3}\right)^{3x}$

$$x = -3$$

b $\left(\frac{2}{9}\right)^4 \times \left(\frac{2}{9}\right)^7 = \left(\frac{2}{9}\right)^{2x}$

$$x = \frac{11}{2}$$