

Multiplying & Dividing Fractions

(Warm-Up) Find each product.

$$1) \frac{1}{2} \times \frac{1}{2} = \boxed{\frac{1}{4}}$$

$$2) \frac{2}{5} \times \frac{1}{2} = \boxed{\frac{2}{5}}$$

$$3) \left(3\frac{3}{5}\right)\left(\frac{1}{2}\right) = \frac{18}{5} \times \frac{1}{2}$$

$$= \frac{9}{5} = \boxed{1\frac{4}{5}}$$

$$4) \left(\frac{4}{3}\right)\left(\frac{5}{4}\right) = \frac{5}{3}$$

$$= \boxed{1\frac{2}{3}}$$

$$5) 1\frac{4}{5} \cdot \frac{4}{3} = \frac{9}{5} \times \frac{4}{3}$$

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

$$6) 4 \cdot \frac{6}{5} = \frac{4}{1} \times \frac{6}{5}$$

$$= \frac{24}{5} = \boxed{4\frac{4}{5}}$$

(Warm-Up) Find each quotient.

$$7) \frac{3}{5} \div \frac{2}{3} = \frac{3}{5} \times \frac{3}{2}$$

$$= \boxed{\frac{9}{10}}$$

$$8) \frac{3}{2} \div \frac{5}{4} = \frac{3}{2} \times \frac{4}{5}$$

$$= \frac{6}{5} = \boxed{1\frac{1}{5}}$$

$$9) \frac{3}{5} \div 2\frac{3}{5} = \frac{3}{5} \times \frac{5}{13}$$

$$= \boxed{\frac{3}{13}}$$

$$10) 2\frac{3}{4} \div \frac{3}{5} = \frac{11}{4} \times \frac{5}{3}$$

$$= \frac{55}{12} = \boxed{4\frac{7}{12}}$$

Developing Find each product.

$$11) -\frac{3}{7} \times -\frac{7}{4} = \boxed{\frac{3}{4}}$$

$$12) \frac{9}{5} \times -\frac{11}{8} = \frac{-99}{40} \\ = \boxed{-2\frac{19}{40}}$$

$$13) -\frac{3}{8} \times \frac{4}{5} = \boxed{-\frac{3}{10}}$$

$$14) 1\frac{2}{3} \times -\frac{6}{7} = \frac{5}{3} \times -\frac{6}{7} \\ = -\frac{10}{7} = \boxed{-1\frac{3}{7}}$$

$$15) -3\frac{1}{2} \times \frac{7}{8} = -\frac{7}{2} \times \frac{7}{8} \\ = -\frac{49}{16} = \boxed{-3\frac{1}{16}}$$

$$16) -2 \times \frac{7}{6} = -\frac{2}{1} \times \frac{7}{6} \\ = -\frac{7}{3} = \boxed{-2\frac{1}{3}}$$

Find each quotient.

$$17) \frac{-8}{5} \div \frac{-2}{5} = \frac{-8}{5} \times \frac{5}{2} \\ = \boxed{4}$$

$$18) \frac{-1}{2} \div \frac{5}{4} = \frac{-1}{2} \times \frac{4}{5} \\ = \boxed{-\frac{2}{5}}$$

$$19) -2\frac{4}{7} \div \frac{2}{3} = -\frac{18}{7} \times \frac{3}{2} \\ = -\frac{27}{7} = \boxed{-3\frac{6}{7}}$$

$$20) \frac{1}{3} \div -2\frac{5}{6} = \frac{1}{3} \times -\frac{6}{17} \\ = \boxed{-\frac{2}{17}}$$

$$21) -1\frac{7}{8} \div -2\frac{3}{8} = \frac{-15}{8} \times \frac{8}{19} \\ = \boxed{\frac{15}{19}}$$

$$22) 1\frac{1}{2} \div -2\frac{1}{2} = \frac{3}{2} \times -\frac{2}{5} \\ = \boxed{-\frac{3}{5}}$$

Proficient: Find each product.

$$23) (3)\left(-\frac{9}{8}\right) = \frac{3}{1} \times \frac{-9}{8}$$

$$= -\frac{27}{8} = \boxed{-3\frac{3}{8}}$$

$$24) \left(1\frac{4}{5}\right)\left(-\frac{4}{3}\right) = \frac{3\cancel{4}}{5} \times \frac{-4}{\cancel{3}}$$

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

$$25) \left(-3\frac{2}{9}\right)\left(\frac{3}{7}\right) = \frac{-29}{3\cancel{9}} \times \frac{\cancel{3}}{7}$$

$$= -\frac{29}{21} = \boxed{-1\frac{8}{21}}$$

$$26) \left(1\frac{3}{4}\right)\left(-\frac{7}{5}\right) = \frac{7}{4} \times \frac{-7}{5}$$

$$= -\frac{49}{20} = \boxed{-2\frac{9}{20}}$$

$$27) \left(2\frac{1}{2}\right)\left(-\frac{2}{3}\right) = \frac{5}{\cancel{2}} \times \frac{-\cancel{2}}{3}$$

$$= -\frac{5}{3} = \boxed{-1\frac{2}{3}}$$

$$28) \left(-3\frac{7}{9}\right)\left(-\frac{9}{5}\right) = \frac{-34}{\cancel{9}} \times \frac{-\cancel{9}}{5}$$

$$= \frac{34}{5} = \boxed{6\frac{4}{5}}$$

Find each quotient.

$$29) \frac{-1}{2} \div \frac{1}{10} = \frac{-1}{\cancel{2}} \times \frac{\cancel{10}}{1}$$

$$= -\frac{5}{1} = \boxed{-5}$$

$$30) -1\frac{7}{10} \div \frac{-4}{5} = \frac{-17}{\cancel{10}} \times \frac{\cancel{5}}{4}$$

$$= \frac{17}{8} = \boxed{2\frac{1}{8}}$$

$$31) 4\frac{5}{6} \div \frac{-16}{9} = \frac{29}{\cancel{6}} \times \frac{-\cancel{9}}{16}$$

$$= -\frac{87}{32} = \boxed{-2\frac{23}{32}}$$

$$32) \frac{3}{2} \div -1 = \frac{3}{2} \times \frac{-1}{1}$$

$$= -\frac{3}{2} = \boxed{-1\frac{1}{2}}$$

$$33) \frac{-4}{3} \div -3\frac{1}{10} = \frac{-4}{3} \times \frac{-10}{31}$$

$$= \boxed{\frac{40}{93}}$$

$$34) \frac{-17}{10} \div \frac{5}{4} = \frac{-17}{\cancel{10}} \times \frac{\cancel{4}}{5}$$

$$= -\frac{34}{25} = \boxed{-1\frac{9}{25}}$$

Extending: Find each product.

$$35) \left(-3\frac{3}{8}\right)\left(1\frac{4}{7}\right)\left(-\frac{2}{5}\right) = \frac{-27}{48} \times \frac{11}{7} \times \frac{-2}{5}$$

$$= \frac{+297}{140} = \boxed{2\frac{17}{140}}$$

$$36) (2)\left(-2\frac{1}{2}\right)\left(\frac{1}{6}\right) = \frac{12}{1} \times \frac{-5}{2} \times \frac{1}{6}$$

$$= \boxed{\frac{-5}{6}}$$

$$37) (-2)\left(\frac{3}{4}\right)\left(-\frac{1}{5}\right) = \frac{-2}{1} \times \frac{3}{4} \times \frac{-1}{5}$$

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

$$38) \left(-2\frac{1}{6}\right)(2)\left(-\frac{7}{4}\right)\left(-\frac{4}{7}\right) = \frac{-13}{3} \times \frac{2}{1} \times \frac{-7}{4} \times \frac{-4}{7}$$

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

$$39) \left(1\frac{1}{3}\right)(5)\left(-\frac{1}{2}\right)\left(-\frac{7}{6}\right) = \frac{42}{3} \times \frac{5}{1} \times \frac{-1}{2} \times \frac{-7}{6}$$

$$= \frac{35}{9} = \boxed{3\frac{8}{9}}$$

$$40) \left(3\frac{1}{2}\right)\left(-3\frac{2}{5}\right)\left(\frac{7}{8}\right)\left(-\frac{13}{7}\right) = \frac{7}{2} \times \frac{-17}{5} \times \frac{7}{8} \times \frac{-13}{7}$$

$$= \frac{1547}{80} = \boxed{19\frac{27}{80}}$$

Find each quotient.

$$41) -2\frac{3}{8} \div 5\frac{2}{5} = \frac{-19}{8} \times \frac{5}{27}$$

$$= \boxed{\frac{-95}{216}}$$

$$42) 1 \div \frac{-3}{7} = \frac{1}{1} \times \frac{-7}{3}$$

$$= \frac{-7}{3} = \boxed{-2\frac{1}{3}}$$

$$43) \frac{4\frac{1}{5}}{-3\frac{4}{5}} = \frac{21}{8} \times \frac{-5}{19}$$

$$= \frac{-21}{19} = \boxed{-1\frac{2}{19}}$$

$$44) \frac{-1\frac{1}{10}}{2} = \frac{-11}{10} \times \frac{1}{2}$$

$$= \boxed{\frac{-11}{20}}$$

$$45) \frac{7}{5} \div -9 = \frac{7}{5} \times \frac{-1}{9}$$

$$= \boxed{\frac{-7}{45}}$$

$$46) \frac{-\frac{3}{4}}{5\frac{3}{10}} = \frac{-3}{4} \times \frac{10}{53}$$

$$= \boxed{\frac{-15}{106}}$$