

Quiz 2 on Fractions

1) Describe a fraction in the space provided.

$\frac{\text{Parts of Interest}}{\text{Total Number of Parts}}$ or $\frac{\text{Important Parts}}{\text{Whole Parts}}$ or $\frac{\text{Numerator}}{\text{Denominator}}$

2) Write a fraction describing one player on a ten-player basketball team. $\frac{1}{10}$

3) Write a fraction describing the five starting players on a ten-player basketball team. $\frac{5}{10} = \frac{5 \div 5}{10 \div 5} = \frac{1}{2}$

Write each fraction as an equivalent fraction with the given denominator.

4A) $\frac{1}{3} = \frac{\quad}{15}$ $\frac{1}{3} = \frac{1 \times 5}{3 \times 5} = \frac{5}{15}$ 4B) $\frac{3}{5} = \frac{\quad}{100}$ $\frac{3}{5} = \frac{3 \times 20}{5 \times 20} = \frac{60}{100}$

5) Write $\frac{8}{2}$ as a whole number.

$$\frac{8}{2} = 4 \quad \text{or} \quad \frac{8 \div 2}{2 \div 2} = \frac{4}{1} = 4$$

6) Write $\frac{17}{5}$ as a mixed number.

$$17/5 = 3 \text{ R } 2 \quad \text{and} \quad \frac{17}{5} = 3\frac{2}{5}$$

7) Arrange the following fractions in ascending (increasing) order. **Hint:** Change each to an equivalent fraction so that all have the same denominator.

$$\frac{1}{5} = \frac{20}{100} \quad \frac{1}{20} = \frac{5}{100} \quad \frac{1}{4} = \frac{25}{100} \quad \frac{1}{25} = \frac{4}{100}$$

$$\frac{1}{25}, \quad \frac{1}{20}, \quad \frac{1}{5}, \quad \frac{1}{4}$$

8) Which fraction equals $4\frac{2}{7}$?

A) $\frac{13}{7}$ C) $\frac{7}{30}$

B) $\frac{7}{13}$ D) $\frac{30}{7}$

$$4\frac{2}{7} = \frac{7 \times 4 + 2}{7} = \frac{30}{7}$$

Answer D

9) $\frac{2}{5} + \frac{1}{5} =$

$$\frac{2+1}{5} = \frac{3}{5}$$

10) $\frac{6}{11} + \frac{4}{11} - \frac{2}{11} =$

$$\frac{6+4-2}{11} = \frac{8}{11}$$

11) $\frac{2}{3} + \frac{4}{3} =$

$$= \frac{2+4}{3} = \frac{6}{3} = 2$$

12) $\frac{2}{3} + \frac{1}{6} =$

$$\begin{array}{r} \frac{2}{3} = \frac{2 \times 2}{3 \times 2} = \frac{4}{6} \\ + \frac{1}{6} = \quad + \frac{1}{6} \\ \hline \frac{5}{6} \end{array}$$

13) $\frac{7}{8} - \frac{3}{4} =$

$$\begin{array}{r} \frac{7}{8} = \quad \quad \quad \frac{7}{8} \\ - \frac{3}{4} = \frac{3 \times 2}{4 \times 2} = - \frac{6}{8} \\ \hline \frac{1}{8} \end{array}$$

$$14) \quad \frac{1}{5} \times \frac{1}{5} =$$

$$\frac{1 \times 1}{5 \times 5} = \frac{1}{25}$$

$$15) \quad \frac{3}{7} \times \frac{7}{15} =$$

$$\frac{\overset{1}{\cancel{3}}}{\underset{1}{7}} \times \frac{\overset{1}{\cancel{7}}}{\underset{5}{15}} = \frac{1}{5}$$

$$16) \quad \frac{9}{10} \div \frac{3}{5} =$$

$$\frac{\overset{3}{\cancel{9}}}{\underset{2}{10}} \times \frac{\overset{1}{\cancel{5}}}{\underset{1}{3}} = \frac{3}{2} = 1\frac{1}{2}$$

$$17) \quad \frac{6}{6} \div \frac{1}{3} =$$

$$\frac{\overset{1}{\cancel{6}}}{\underset{2}{6}} \times \frac{\overset{3}{\cancel{3}}}{\underset{1}{1}} = \frac{6}{2} = 3$$

$$18) \quad 6\frac{2}{5} + 2\frac{1}{5} =$$

$$\begin{array}{r} 6\frac{2}{5} \\ + 2\frac{1}{5} \\ \hline 8\frac{3}{5} \end{array}$$

$$19) \quad 4\frac{1}{3} + 2\frac{1}{2} =$$

$$\begin{array}{r} 4\frac{1}{3} = 4 + \frac{1 \times 2}{3 \times 2} = 4\frac{2}{6} \\ + 2\frac{1}{2} = 2 + \frac{1 \times 3}{2 \times 3} = +2\frac{3}{6} \\ \hline 6\frac{5}{6} \end{array}$$

$$20) \quad 5\frac{3}{4} - 3\frac{7}{8} =$$

$$\begin{array}{r} 5\frac{3}{4} = 5 + \frac{3 \times 2}{4 \times 2} = 5\frac{6}{8} = 4\frac{8}{8} + \frac{6}{8} = 4\frac{14}{8} \\ - 3\frac{7}{8} = \qquad \qquad \qquad - 3\frac{7}{8} \\ \hline 1\frac{7}{8} \end{array}$$

$$21) \quad 6 - 2\frac{3}{4} =$$

$$\begin{array}{r} 6 = 5 + \frac{4}{4} = 5\frac{4}{4} \\ - 2\frac{3}{4} \\ \hline 3\frac{1}{4} \end{array}$$

$$22) \quad (2\frac{1}{4})(1\frac{1}{2}) =$$

$$\begin{array}{r} = (\frac{9}{4})(\frac{3}{2}) \\ = \frac{27}{8} \\ = 3\frac{3}{8} \end{array}$$

$$23) \quad 4\frac{1}{2} \div 1\frac{1}{8} =$$

$$= \frac{9}{2} \div \frac{9}{8}$$

$$= \frac{\overset{1}{\cancel{9}}}{\underset{1}{2}} \times \frac{\overset{4}{\cancel{8}}}{\underset{1}{9}}$$

$$= 4$$

$$24) \quad 2\frac{1}{2} + (1\frac{1}{3} \times \frac{3}{4}) =$$

$$= 2\frac{1}{2} + (\frac{4}{3} \times \frac{3}{4})$$

$$= 2\frac{1}{2} + (\frac{12}{12})$$

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

25) Find the total weight of packages weighing $5\frac{1}{2}$ pounds, $9\frac{2}{3}$ pounds, and $7\frac{3}{4}$ pounds.

$$\begin{aligned}5\frac{1}{2} &= 5 + \frac{1 \times 6}{2 \times 6} = 5\frac{6}{12} \\+ \quad 9\frac{2}{3} &= 9 + \frac{2 \times 4}{3 \times 4} = 9\frac{8}{12} \\7\frac{3}{4} &= 7 + \frac{3 \times 3}{4 \times 3} = 7\frac{9}{12} \\ \hline &21\frac{23}{12} = 22\frac{11}{12} \text{ pounds}\end{aligned}$$

26) Joan spends $\frac{1}{4}$ of her $6\frac{2}{3}$ hours of study time doing history. How many hours does she study history?

$$\begin{aligned}\frac{1}{4} \times 6\frac{2}{3} \\ &= \frac{1}{4} \times \frac{20}{3} \\ &= \frac{1 \times 20}{4 \times 3} \\ &= \frac{20}{12} \\ &= 1\frac{8}{12} \\ &= 1\frac{2}{3} \text{ hours}\end{aligned}$$

27) How many $2\frac{3}{4}$ foot bookshelves can be made from a 10-foot board?

$$\begin{aligned}\frac{10 \text{ feet}}{2\frac{3}{4} \text{ feet}} \\ &= \frac{10}{\frac{11}{4}} \\ &= \frac{10}{1} \times \frac{4}{11} \\ &= \frac{40}{11} \rightarrow 3 \text{ shelves}\end{aligned}$$

28) A well-done roast beef should cook for $\frac{1}{3}$ of an hour per pound. How long should a $5\frac{1}{2}$ pound roast cook if it is to be well-done?

$$\begin{aligned}\frac{1}{3} \times 5\frac{1}{2} \\ &= \frac{1}{3} \times \frac{11}{2} \\ &= \frac{1 \times 11}{3 \times 2} \\ &= \frac{11}{6} \\ &= 1\frac{5}{6} \text{ hours}\end{aligned}$$