

FRACTIONS WORKSHEET

Simplify before multiplying or dividing whenever possible.

Also, when reducing a fraction, unless it reduces to an integer ...as in $\frac{8}{4} = 2$ or a fraction with 1 in the numerator

...such as $\frac{5}{15} = \frac{1}{3}$, be sure to show each number as a product such that there is a common factor.

For example...when reducing 9 over 12 each number is written as a product such that one of the factors is common to both the 9 and the 12. Of course, in this case that number is 3.

$$\frac{9}{12} = \frac{3(3)}{3(4)}, \text{ notice that the threes are common factors and thus will divide out...3 divided by 3 is 1.}$$
$$= \frac{3}{4}$$

Simplify the following fractions

1. $\frac{21}{24}$

2. $\frac{20}{25}$

3. $\frac{28}{35}$

4. $\frac{27}{36}$

Simplify before multiplying the following fractions.

5. $\frac{5}{1} \times \frac{12}{16}$

6. $\frac{20}{16} \times \frac{1}{3}$

7. $\frac{2}{3} \times \frac{20}{45}$

8. $\frac{45}{15} \times \frac{16}{26}$

Simplify before multiplying the following fractions. Note: the numbers that share common factors don't have to be in the same fraction to be able to be simplified. The numerator of one fraction can simplify with the denominator of another when fractions are being multiplied.

9. $\frac{1}{4} \times \frac{12}{5}$

10. $\frac{12}{5} \times \frac{3}{8}$

11. $\frac{7}{16} \times \frac{24}{35}$

12. $\frac{24}{35} \times \frac{21}{16}$

Remember that the rule for dividing fractions is the same as the rule for multiplying fractions. Multiply or divide numerators and multiply or divide denominators. Use that rule for dividing the following fractions. Check your answers by repeating the problem using the method of multiplying the numerator by the reciprocal of the denominator.

$$13. \quad \frac{12}{5} \div \frac{4}{1}$$

$$14. \quad \frac{12}{25} \div \frac{3}{5}$$

$$15. \quad \frac{20}{21} \div \frac{4}{21}$$

$$16. \quad \frac{25}{2} \div \frac{15}{1}$$

Time to combine all types of problems. Be sure to simplify whenever possible before multiplying or dividing.

$$17. \quad \frac{\frac{20}{9} \div \frac{5}{3}}{\frac{1}{8} \times \frac{16}{1}}$$

$$18. \quad \frac{\frac{3}{5} \times \frac{20}{21}}{\frac{10}{14} \div \frac{5}{2}}$$

$$19. \quad \frac{\frac{25}{9} \div \frac{10}{3}}{\frac{16}{8}}$$

$$20. \quad \frac{\frac{6}{9}}{\frac{10}{21} \times \frac{28}{15}}$$