

# Diagnostic Test

## Unit 5 Fractions: Multiplying & Dividing

**Purpose:** to help the student and instructor determine what, if any, sections of this unit the student needs to study.

*Do all the math work neatly on the test itself. The instructor will pay as much attention to the work as the answers.*

1.  $\frac{3}{5} \times \frac{2}{7} =$

2.  $\frac{1}{2} \times \frac{5}{6} =$

3.  $\frac{2}{3}$  of 15 =

4.  $\frac{1}{5}$  of  $\frac{3}{4} =$

*In problems 5, 6 and 7 below, show how you can use “canceling” to make the multiplication easier.*

5.  $\frac{3}{4} \times \frac{6}{7} =$

6.  $\frac{15}{24} \times \frac{18}{25} =$

7.  $48 \times \frac{5}{8} =$

8. Change  $5\frac{2}{3}$  to an improper fraction.

9. Change  $12\frac{5}{6}$  to an improper fraction.

10.  $3\frac{3}{4} \times 1\frac{2}{3} =$

11. Write the math definition of the word “reciprocal” and write an example that demonstrates what reciprocal means.

12. Write an example that shows how you use a reciprocal in dividing fractions.

Do the problems below, showing all your work:

13.  $12 \div \frac{3}{4} =$

14.  $\frac{7}{8} \div 4 =$

15.  $\frac{2}{3} \div \frac{3}{4} =$

16.  $\frac{5}{6} \div \frac{2}{3} =$

17.  $9\frac{2}{3} \div 3\frac{1}{4} =$

18.  $20 \div 5\frac{2}{5} =$

Do the word problems below, showing all your work:

19.  $\frac{1}{4}$  of the students were over 16 years old. If there were 180 students, how many of them were over 16 years old?

20. I gathered  $10\frac{3}{4}$  pounds of strawberries. My sister gathered  $2\frac{1}{3}$  times as much as I did. How many pounds did she gather?

21. How many  $3\frac{1}{2}$  foot-long leather belts can be cut from a strip of leather that is  $24\frac{1}{2}$  feet long?

22. I have visited  $\frac{7}{10}$  of the 50 states in the United States. How many states have I visited?