

BIG 20 STUDY GUIDE

1. 2.6×100

$$\begin{array}{r} 2.6 \\ \times 100 \\ \hline \end{array} = 260$$

To multiply by 10, 100, 1000, ect. use the short cut. Move the decimal:

1 place right for $\times 10$

2 places right for $\times 100$

3 places right for $\times 1000$

Add on zeros when necessary. Drop off front end zeros.

3. 0.06×1000

$$\begin{array}{r} 0.06 \\ \times 1000 \\ \hline \end{array} = 60$$

2. $5.1 \div 100$

$$\begin{array}{r} 5.1 \\ \div 100 \\ \hline \end{array} = 0.051$$

To divide by 10, 100, 1000, ect. use the short cut. Move the decimal:

1 place left for $\div 10$

2 places left for $\div 100$

3 places left for $\div 1000$

Add on zeros when necessary.

4. $18.6 \div 10$

$$\begin{array}{r} 18.6 \\ \div 10 \\ \hline \end{array} = 1.86$$

5. $\frac{3}{8} = ?$ (decimal)

$$\begin{array}{r} 0.375 \\ 8 \overline{)3.000} \\ \underline{-24} \\ 60 \\ \underline{-56} \\ 40 \\ \underline{-40} \\ 0 \end{array}$$

To convert a fraction to a decimal divide the denominator into the numerator. Keep dividing until you get a zero remainder or a repeating answer.

6. $0.73 = ?$ (fraction)

$$\begin{aligned} 0.73 &= 73 \text{ hundredths} \\ &= \frac{73}{100} \end{aligned}$$

To convert a decimal number to a fraction just read the decimal and write as a fraction.

7. $\frac{1}{2} = ?$ (percent)

$$\begin{array}{r} .50 \\ 2 \overline{)1.00} \\ \hline \end{array}$$

$$.50 = 50\%$$

To convert a fraction to a percent.

First convert to a decimal, (as you do in #5) then move the decimal 2 places right and add on a percent sign.

8. $\left(\frac{3}{5}\right)^2$

$$\left(\frac{3}{5}\right)^2 = \frac{3 \times 3}{5 \times 5} = \frac{9}{25}$$

To do powers with fractions multiply both the numerator and denominator as many times as indicated by the exponent (power).

9. $(1.2)^2$

$$\begin{array}{r} 1.2 \\ \times 1.2 \\ \hline 24 \\ 12 \\ \hline 1.44 \end{array}$$

To do powers multiply the number as many times as indicated by the exponent (power).

10. 3% of 820

$$\begin{array}{r} 0.03 \times 820 \\ 820 \\ \times .03 \\ \hline 24.60 \end{array}$$

1. Change the percent to a decimal number by moving the decimal (at the end) 2 places to the left.

2. Change "of" to X.

3. Multiply.

11. Round \$6.3572 to the nearest cent

$$\$6.3572 \rightarrow \$6.36$$

To round a decimal or whole number:

1. Circle the place value you are rounding.

2. If the digit to the right is 0, 1, 2, 3, or 4 the circled number stays the same.

12. Round $8\frac{3}{7}$ to the nearest whole number.

$\frac{3}{7}$ is less than half so
 $8\frac{3}{7} \rightarrow 8$

13. $3\frac{1}{2} + 2\frac{2}{3}$

$$\begin{array}{r} 3\frac{1}{2} = \frac{3}{6} \\ + 2\frac{2}{3} = \frac{4}{6} \\ \hline 5\frac{7}{6} = 6\frac{1}{6} \end{array}$$

14. $7\frac{1}{5} - \frac{2}{3}$

$$\begin{array}{r} 6\frac{6}{5} = \frac{3}{15} + \frac{15}{15} = 6\frac{18}{15} \\ - \frac{2}{3} = \frac{10}{15} \\ \hline 6\frac{8}{15} \end{array}$$

15. $3\frac{1}{3} \times 2\frac{3}{4}$

$$\begin{array}{r} 3\frac{1}{3} \times 2\frac{3}{4} \\ \frac{5}{3} \times \frac{11}{4} = \frac{55}{6} = 9\frac{1}{6} \end{array}$$

16. $\frac{1}{4} \div 1\frac{1}{2}$

$$\begin{array}{r} \frac{1}{4} \div 1\frac{1}{2} \\ \frac{1}{4} \div \frac{3}{2} \\ \frac{1}{4} \times \frac{2}{3} = \frac{2}{12} = \frac{1}{6} \end{array}$$

17. $15 + 0.23 + 8.8$

$$\begin{array}{r} 15.00 \\ 0.23 \\ + 8.80 \\ \hline 24.03 \end{array}$$

18. $45 - 4.2$

$$\begin{array}{r} 45 \\ - 4.2 \\ \hline 40.8 \end{array}$$

19. 0.2×0.3

$$\begin{array}{r} 0.2 \leftarrow 1 \text{ place} \\ \times 0.3 \leftarrow 1 \text{ place} \\ \hline 0.06 \leftarrow 2 \text{ places} \end{array}$$

20. $0.612 \div 0.06$

$$\begin{array}{r} 10.2 \\ 0.06 \overline{) 0.612} \quad 6 \overline{) 61.2} \\ \underline{6} \\ 0 \\ \underline{0} \\ 12 \\ \underline{12} \\ 0 \end{array}$$

To round mixed numbers:



1. If the fraction is less than $1/2$, the whole number stays the same.
2. If the fraction is greater than $1/2$, add one to the whole number.

To add or subtract fractions or mixed numbers:

1. Find a common denominator.
2. Find the equivalent numerator.
3. Add or subtract numerators only.
4. Keep the denominators the same.
5. Change any improper fractions to mixed numbers.
6. Make sure the answer is in simplest form.

* Be careful with the borrowing!

To multiply mixed numbers:

1. Change the mixed numbers to improper fractions.
2. Cross cancel when possible.
3. Multiply the numerators and the denominators.
4. Change any improper fractions back to mixed numbers.
5. Make sure answer is in simplest form.

To divide mixed numbers:

1. Change the mixed numbers to improper fractions.
2. Take the reciprocal of the 2nd fraction.
3. Cross cancel and multiply the numerator and denominators.
4. Change any improper fractions back to mixed numbers.
5. Make sure answer is in simplest form.

To add decimal numbers line up decimal points and bring one down for the answer. If there is no decimal point you may add one behind the number. Then you may add in zeros in the empty spaces.

To subtract decimal numbers line up decimal points and bring one down for the answer. If there is no decimal point you may add one behind the number. Then you must add in zeros in the empty spaces.

To multiply decimal numbers do not line up decimal points. Count how many digits are behind the decimal point in both numbers. The answer must have the same amount of digits behind the decimal point.

To divide decimal numbers move the decimal in the divisor to the end of the number. Move the decimal in the dividend the same amount of places. Bring the decimal straight up for the answer. Keep dividing until you get a zero remainder.