

Learning Center
Schoolcraft College

Jump Start

Session 3

Course-Pak

Order of Operations - Whole Numbers

The order of operations tells us to do:

FIRST _____

SECOND _____

THIRD _____

FOURTH _____

To help us remember this very particular order...

P_{lease} **E**_{xcuse} **M**_y **D**_{ear} **A**_{unt} **S**_{ally}

P _____

E _____

M _____ **OR** **D** _____

A _____ **OR** **S** _____

It is very important to remember!

multiply _____ divide _____!

And add _____ subtract _____!

Ex: $7-3+4$

$10 + 6 - 2$

$24 \div 2 \cdot 3$

$7 \cdot 2 \div 2$

$$15 - 3^2 + 6$$

$$4 + 8(3) - 10$$

$$(2 + 3)5 - 5$$

$$36 \div 3(15 - 2 \cdot 3)$$

$$5^2 - 2(3^2 + 1) + 3 \cdot 2$$

Fractions

A fraction represents division and is written: $\frac{\text{Numerator}}{\text{Denominator}} = \frac{\text{is part}}{\text{of whole}}$. To reduce fractions, divide the N and D by a common factor (number). ALWAYS *reduce completely* when working with fractions.

Proper fraction: **N < D**

$$\frac{3}{15}$$

$$\frac{300}{1500}$$

$$\frac{165}{600}$$

Improper fraction: **N > D** Improper fractions to mixed number:

$$\frac{7}{2} = 2\frac{7}{2}$$

$$\frac{58}{9}$$

Mixed numbers to improper fractions:

$$4\frac{2}{5}$$

$$10\frac{3}{4}$$

*Note: When working with mixed numbers, change to improper and use fraction rules.

Multiplying fractions _____

$$\frac{2}{3} \cdot \frac{9}{10}$$

$$\frac{10}{18} \cdot \frac{9}{25}$$

Dividing fractions _____

$$\frac{8}{15} \div \frac{16}{25}$$

$$\frac{3}{4} \div 21$$

Adding and Subtracting fractions _____

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

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

$$\begin{array}{r} \frac{9}{10} \\ - \frac{1}{2} \\ \hline \end{array}$$

$$\begin{array}{r} \frac{5}{6} \\ - \frac{3}{4} \\ \hline \end{array}$$

Decimals

_____ ■ _____

*Note: The decimal point in a whole number is like the period at the end of a sentence.

Adding and subtracting decimals: _____

Ex:

$$1.023 + 75.62$$

$$7 - 4.732$$

Multiplying Decimals: _____

Ex:

$$\begin{array}{r} 19.76 \\ \times 8 \\ \hline \end{array}$$

$$5.4 \times 0.002$$

Dividing Decimals: _____

Ex:

$$7.704 \div 0.36$$

$$0.07 \overline{) .42406}$$

Multiplying and dividing by powers of ten and **MR. DILL**:

$$24 \times 1 =$$

$$24 \div 1 =$$

$$24 \times 10 =$$

$$24 \div 10 =$$

$$24 \times 100 =$$

$$24 \div 100 =$$

$$24 \times 1000 =$$

$$24 \div 1000 =$$

$$0.752 \times 100 =$$

$$0.752 \div 10 =$$

$$85.1 \times 1000 =$$

$$85.1 \div 1000 =$$

Proportions

To solve a proportion _____

$$\frac{x}{3} = \frac{5}{15}$$

$$\frac{2}{x} = \frac{7}{4}$$

$$\frac{5}{8} = \frac{n}{4}$$

$$\frac{5}{6} = \frac{11}{a}$$

Percents

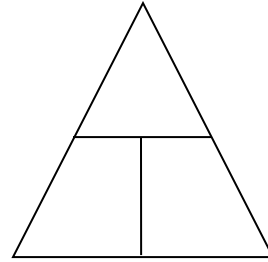
Percent means: *out of 100*

15% = = =

Note: 100% means _____

Percent problems:

Proportion: _____



12% of 50 is what number?

15% of what number is 7?

3 is what percent of 20?

Percent to number: _____

Fraction	Decimal
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22%

3.5%

215%

0.024%

 $\frac{1}{2}\%$

Number to a percent: _____

 $\frac{4}{5}$

0.045

3

 $1\frac{3}{10}$

7.385

JumpStart! 2000 Practice Quest

No calculator. Evaluate and/or Simplify. Reduce all fractions to lowest terms.

1. $\frac{1}{8} + \frac{5}{8} =$

2. $\frac{2}{3} + \frac{1}{4} =$

3. $\frac{8}{21} - \frac{1}{21} =$

4. $\frac{7}{8} - \frac{3}{4} =$

5. $\frac{1}{2} \cdot \frac{4}{5} =$

6. $5 \cdot \frac{3}{35} =$

7. $\frac{1}{10} \div \frac{1}{2} =$

8. $3 \div \frac{3}{8} =$

9. $0.04 + 0.5 =$

10. $216.5 - 19 =$

11. $0.7 \cdot 0.3 =$

12. $7.9 \cdot 6.8 =$

13. $2.25 \div 1.5 =$

14. $4 \div 5 =$

15. $24 \div 2 \cdot 3$

16. $(2 + 3)8 - 4 \div 2$

17. 14% of what is 42?

18. 5 is what percent of 8?

Write the equivalent fraction, decimal or percent

	<i>Fraction</i>	<i>Decimal</i>	<i>Percent</i>
19.	$\frac{1}{5}$	_____	_____
20.	_____	0.06	_____
21.	_____	_____	54%
22.	_____	1.3	_____
23.	$\frac{3}{8}$	_____	_____
24.	_____	_____	0.2%

JumpStart! 2000 Practice Quest-ANSWERS

Simplify and Evaluate. Reduce all fractions to lowest terms.

1. $\frac{3}{4}$

2. $\frac{11}{12}$

3. $\frac{1}{3}$

4. $\frac{1}{8}$

5. $\frac{2}{5}$

6. $\frac{3}{7}$

7. $\frac{1}{5}$

8. 8

9. 0.54

10. 197.5

11. 0.21

12. 53.72

13. 1.5

14. 0.8

15. 36

16. 38

17. 300

18. 62.5%

Write the equivalent fraction, decimal or percent

	<i>Fraction</i>	<i>Decimal</i>	<i>Percent</i>
19.	$\frac{1}{5}$	<u>0.2</u>	<u>20%</u>
20.	<u>$\frac{3}{50}$</u>	0.06	<u>6%</u>
21.	<u>$\frac{27}{50}$</u>	<u>0.54</u>	54%
22.	<u>$\frac{13}{10}$ or $1\frac{3}{10}$</u>	1.3	<u>130%</u>
23.	$\frac{3}{8}$	<u>0.375</u>	<u>37.5%</u>
24.	<u>$\frac{1}{500}$</u>	<u>0.002</u>	0.2%