

# Essential Skills Test | Study Guide

Directions: Refer to your notes and homework video tutors to review any concepts that you know you need to review.

## Lessons 2-1 and 2-2 Mean, Median and Mode

1) What are the two steps you must follow in order to find the **mean** of a data set?

Step 1: \_\_\_\_\_

Step 2: \_\_\_\_\_

2) What must you do with a set of data **before** you find the **median**?

\_\_\_\_\_

3) Find the mean, median and mode for each set of data.

16 , 17 , 4 , 12 , 4 , 4 , 2 , 17 , 20
Mean = _____ Median = _____ Mode= _____

## Multiplying and Dividing Whole Numbers-Show your work to multiply or divide.

4)            k 12 x 18	5)            345 x 17
6)            459 ÷ 9	7)            984 ÷ 12

**Lesson 1-5 through 1-6 Understanding Decimal Place Value/Rounding & Comparing Decimals**

8) In the number 8.515 the 5 in the <b>tenths</b> place is _____ times smaller than the 5 in the <b>thousandths</b> place.	9) Round 5.467 to the nearest:  Tenth _____ Hundredth _____  Whole Number _____
10) Compare using <, > or =.  a) 1.05 _____ 0.345 b) 6.7 _____ 6.70 c) 0.0156 _____ 0.156	11) Multiply/Divide by moving the decimal point appropriately:  a) $5.6 \times 10 =$ _____ b) $5.6 \times 1000 =$ _____ c) $78.3 \div 100 =$ _____ d) $78.3 \div 10 =$ _____

**Lessons 1-7 through 1-8 All Operations with Decimals-** Find each sum, difference, product or quotient below. Then, write your answer in **word form** Show all of you work.

12)  $5 + 12.08$  <b>Word Form:</b>	13)  $9 - 1.45$  <b>Word Form:</b>
14)  $16.03 + 5.28$  <b>Word Form:</b>	15)  $0.8 - 0.126$  <b>Word Form:</b>
16)  $53 \times .04$  <b>Word Form:</b>	17)  $3.702(1.7)$  <b>Word Form:</b>

18)	$385.6 \div 8$	19)	$2.25 \div 0.5$
Word Form:		Word Form	

### Lessons 3-5 to 3-7 Solve One Step Equations

What operation will “undo” addition?    What operation will “undo” subtraction?

\_\_\_\_\_

\_\_\_\_\_

What operation will “undo” multiplication?    What operation will “undo” division?

\_\_\_\_\_

\_\_\_\_\_

#### Key Reminders:

- Remember to **isolate the variable** using the **inverse operation**.
- Show your work performing the same operation to **both sides** of the equation in order to keep it **balanced**.

20)	$2.7 + m = 8.2$	21)	$n - 3.2 = 15$
22)	$25h = 450$	23)	$b \div 11 = 87$

**Lessons 5-2 to 5-5 Adding and Subtracting Fractions and Mixed Numbers-** Show your work to find each sum or difference. Write all of your answers in simplest form.

**Key Reminders:**

- Before you can add or subtract, your fractions need to have a **common denominator**
- You **may** need to borrow (regroup) when you are subtracting mixed numbers

24) $7\frac{3}{5} + 13\frac{2}{3}$	25) $7\frac{2}{3} - 1\frac{5}{9}$
26) $\begin{array}{r} 1\frac{1}{10} \\ + 7\frac{1}{15} \\ \hline \end{array}$	27) $\begin{array}{r} 6\frac{2}{3} \\ - 3\frac{1}{15} \\ \hline \end{array}$

**Lessons 6-2 to 6-4 Multiplying and Dividing Fractions** Show your work to find each sum or difference. Write all of your answers in simplest form.

**Key Reminders:**

- When multiplying, always check to see if you can **reduce before you multiply**
- For division, multiply by the **reciprocal** (leave it, change it, flip it)

28) $\frac{21}{4} \times \frac{1}{6}$	29) $\frac{7}{2} \times \frac{2}{3}$
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30)	$\frac{13}{4} \div \frac{1}{2}$	31)	$8 \div \frac{4}{5}$
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**Fraction-Decimal Equivalence-** Change each fraction to a decimal and each decimal to a fraction.

32)	$\frac{2}{3}$	33)	$5 \frac{3}{5}$
34)	0.35	35)	8.08

**Lesson 6-7 Converting Units in the U.S. Customary System** -Show your work to complete each conversion.

**Key Notes:**

**Step 1-** Identify whether you are going to multiply or divide:

Larger Unit → Smaller Unit (Multiply!)

Smaller Unit → Larger Unit (Divide!)

**Step 2-** Choose the appropriate

conversion(s) from the chart

**Step 3-** Complete the operation to convert to the new units

36) 3 mi = _____ feet	37) 32 oz. = _____ lb(s)	38) 40 in. = _____ ft.
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**Lesson 1-4 Order of Operations**- Simplify (solve) each expression.

**Key Reminders:**

- Follow the correct **order of operations** (Parentheses, Exponents, Multiply and Divide from left to right, Add and Subtract from left to right)
- Rewrite the expression after each step so you don't get lost.

39)  $(2 + 2)^2 + (24 \div 12)$	40)  $(43 - 3) \div 4 + 2^2$
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**Lessons 3-2 & 3-3 Evaluating Algebraic Expressions**- Simplify each expression

**Key Reminders:**

- Replace **variables** with the values given
- Follow the order of operations to solve the expressions
- remember- if there is no operation sign- it means multiply (ex:  $5ab$  means  $5 \times a$ )

41) Evaluate $4t + 12$ for $t = 13$	42) Evaluate $3ab - (2 + 7)$ for $a = 5$ and $b = 3$
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**Lesson 4-2 Understanding Exponents**- Simplify each expression.

**Key Reminders:**

- Exponents indicate **repeated multiplication**
- Ex:  $5^3 = 5 \times 5 \times 5 = 125$

43) $18 + 2^3 - (8 - 5)$	44) $5^4 - 3 \times 7$
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