

TACHS MATH REVIEW SHEET

DEFINITIONS

INTEGER - A NUMBER WITH NO DECIMAL COMPONENT

PRIME NUMBER - A NUMBER WITH FACTORS OF ONLY 1 AND ITSELF

Ex) 2, 3, 5, 7, 11, 13

AREA - MEASUREMENT OF 2-D SPACE

PERIMETER - DISTANCE AROUND A 2-D SHAPE

POSITIVE/NEGATIVE RULES

ADDITION

IF THE SIGNS ARE THE SAME, ADD & KEEP SIGN

Ex) $5 + 3 = 8$

Ex) $-7 + -2 = -9$

IF THE SIGNS ARE DIFFERENT, FIND THE DIFFERENCE BETWEEN THE ABSOLUTE VALUE OF BOTH NUMBERS AND KEEP THE SIGN OF THE GREATER.

Ex) $5 + -3 = 2$

Ex) $9 + -15 = -6$

Ex) $-8 + 6 = -2$

SUBTRACTION

KEEP - CHANGE - CHANGE THEN FOLLOW ADDITION

RULES

Ex) $5 - -3 =$
 $5 + 3 = 8$

Ex) $-7 - 12 =$
 $-7 + -12 = -19$

MULTIPLICATION / DIVISION

SAME SIGNS \rightarrow POSITIVE

DIFF SIGNS \rightarrow NEGATIVE

Ex) $-3 \times 5 = 15$

$-4 \times 2 = -8$

FRACTIONS

ADDING/SUBTRACTING

\star MUST HAVE COMMON DENOMINATORS

Ex) $\frac{2}{5} + \frac{1}{5} = \frac{3}{5}$

Ex) $\frac{1}{3} + \frac{1}{5} =$

$\frac{1(5)}{3(5)} + \frac{1(3)}{5(3)}$

$\frac{5}{15} + \frac{3}{15} = \frac{8}{15}$

MULTIPLYING

REDUCE, THEN MULTIPLY ACROSS

Ex) $\frac{2}{5} \times \frac{1}{3} = \frac{2}{15}$

Ex) $\frac{2}{5} \times \frac{3}{8} =$

$\frac{1 \cancel{2}}{5} \times \frac{3}{\cancel{8} 4} = \frac{3}{20}$

DIVIDING

KEEP, CHANGE, FLIP

THEN FOLLOW ADDITION RULES


Ex) $\frac{3}{8} \div \frac{9}{10}$

$\frac{3}{8} \times \frac{10}{9}$

$\frac{1 \cancel{3}}{4 \cancel{8}} \times \frac{10 \cancel{5}}{\cancel{9} 3} = \frac{5}{12}$

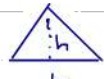
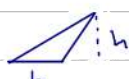
AREA

s  $A = s^2$

 $A = \pi r^2$

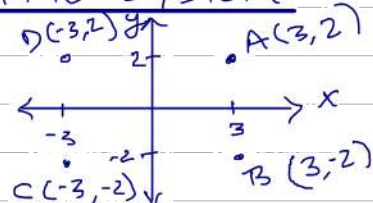
w  $A = l \times w$

 $A = b \times h$

$A = \frac{1}{2} b \times h$

COORDINATE SYSTEM



FOR MORE HELP VISIT CADELLPREP.COM

PERCENT

PERCENT FORMULA

$$\frac{\%}{100} = \frac{\text{PART (is)}}{\text{WHOLE (of)}}$$

% \Rightarrow DECIMAL

MOVE 2 DECIMAL PLACES LEFT

Ex) 35% $\xrightarrow{\text{35}}$.35

Ex) 5% $\xrightarrow{\text{5}}$.05

Ex) 3.4% $\xrightarrow{\text{3.4}}$.034

"OF" MEANS MULTIPLY

Ex) 35% of 8
 $.35 \times 8 = 2.8$

DISCOUNT

GETS SUBTRACTED FROM THE PRICE, BEFORE TAX

Ex) \$20 shirt
30% discount
 $20 \times .30 = 6 \leftarrow$ discount

$$\begin{array}{r} 20 \\ - 6 \\ \hline 14 \leftarrow \text{sale price} \end{array}$$

Ex) \$20 shirt
8.5% tax
 $20 \times .085 = 1.7 \leftarrow$ tax

$$\begin{array}{r} 20.00 \\ + 1.70 \\ \hline 21.70 \leftarrow \text{total w/ tax} \end{array}$$

Ex) \$20 shirt
30% discount
8.5% tax
 $20 \times .30 = 6 \leftarrow$ discount
 $20 - 6 = 14 \leftarrow$ sale price
 $14 \times .085 = 1.19 \leftarrow$ tax
 $14 + 1.19 = 15.19 \leftarrow$ total cost

VERBAL TO ALGEBRAIC

5 LESS THAN X	$x - 5$
5 MORE THAN X	$x + 5$
5 DECREASED BY X	$5 - x$
5 INCREASED BY X	$5 + x$
SUM OF X AND Y	$x + y$
DIFFERENCE OF X AND Y	$x - y$
PRODUCT OF 5 AND Y	$5y$
QUOTIENT OF 5 AND Y	$5 \div y$

PROPORTIONS

* MAKE SURE TO SET UP CORRECTLY

$$\frac{\text{UNIT 1}}{\text{UNIT 2}} = \frac{\text{UNIT 1}}{\text{UNIT 2}}$$

Ex) $\frac{30 \text{ miles}}{1.5 \text{ hr}} = \frac{x \text{ miles}}{4.5 \text{ hrs}}$

CROSS-MULTIPLY TO SOLVE

$$(30)(4.5) = 1.5x$$

$$135 = 1.5x$$

$$\frac{135}{1.5} = \frac{1.5x}{1.5}$$

$$90 = x$$

FOR MORE IN-DEPTH LESSONS, PRACTICE PROBLEMS, AND PRACTICE TESTS VISIT CADDELLPREP.COM

IN-PERSON CLASSES & TUTORING ARE ALSO AVAILABLE AT OUR OFFICE ON STATEN ISLAND.



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NOTE: THIS IS NOT AN ALL-INCLUSIVE STUDY SHEET. THERE ARE MANY MORE TOPICS, BUT THIS IS A GOOD START.

GOOD LUCK!
- GLYN