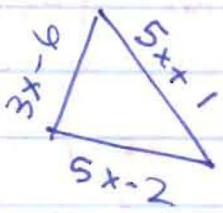
10/17/12 STUDY GUIDE

1) 

- PERIMETER MEANS I NEED TO ADD ALL SIDES TOGETHER.

$5x+1+3x-6+5x-2$

- COMBINE LIKE TERMS

$(5x+3x+5x)+(1-6-2)$

$13x+(-7)=13x-7$

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2) $(5\div5)+5\times(5^2-5)$

- NEED TO USE ORDER OF OPERATIONS
- PEMDAS →
  - MULTIPLY OR DIVIDE FROM LEFT TO RIGHT
  - ADD OR SUBTRACT FROM LEFT TO RIGHT

$(5\div5)+5\times(5^2-5)$

$1+5\times(25-5)$

$1+5(20)$

$1+100$

101

- DIVISION & POWER
- PARENTHESIS / SUBTRACT
- MULTIPLIED
- ADDED

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3) $2\times6^2-26\div2$

$2\times36-26\div2$

$72-13$

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- ORDER OF OPERATION
- EXPONENTS $6^2=36$
- MULTIPLY $(2)(36)$ & DIVIDE $26\div2$
- SUBTRACT $72-13$

- REMEMBER TO FOLLOW ORDER OF OPERATIONS (PEMDAS →)

4) $222-3(5^2-4^2)+12$
$222-3(25-16)+12$
$222-3(9)+12$
$222-27+12$
$195+12$
207

- REMEMBER PEMDAS
- EXPONENTS $5^2, 4^2$
- MINUS 25 AND 16
- multiply 3 AND 9
- SUBTRACT BEFORE ADD, BECAUSE LEFT TO RIGHT
- ADD 195 AND 12

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5) $16y-7y$
$(16-7)y$
$9y$

- COMBINE LIKE TERMS, ADD THE COEFFICIENTS OF THE SAME VARIABLES

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6) $2a-3b+5b-a$
$(2a-a)+(-3b+5b)$
$a+2b$

- COMBINE LIKE TERMS
- ADD THE a's TOGETHER AND ADD THE b's TOGETHER

* CAN'T ADD BECAUSE THEY ARE NOT LIKE TERMS.

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7) n = COST OF THE ITEM.
INCREASE OF 20%
$1n+0.2n$
$1.2n$

- COMBINE LIKE TERMS
- THE EXPRESSION FOR THE MARK UP PRICE.

8) ITEM COST $120 WITH A SALE OF 15% OFF

- THE EXPRESSION IS $120 - 0.15(120)
- $120 = 100% (n − 0.15n)

100% − 15% = 85% IS THE COST OF THE ITEM ON SALE.

- TO FIND SALE PRICE MULTIPLY

0.85(120) =

↑ PERCENT ← ORIGINAL PRICE.

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9) $a - 28 = 19$

$+28 \quad +28$

$a = 47$

- TO SOLVE AN EQUATION YOU CONDUCT THE OPPOSITE OPERATION TO BOTH SIDES.
- ADDITIVE INVERSE.

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10) $x - 6\frac{1}{2} = 3\frac{2}{3}$

$+6\frac{1}{2} \quad +6\frac{1}{2}$

$x = 10\frac{1}{6}$

* SOLVE FOR THE VARIABLE
* COMPLETE THE ADDITIVE INVERSE

$3\frac{2}{3} + 6\frac{1}{2}$

$3 + 6 = 9$

$9 + 1\frac{1}{6} = 10\frac{1}{6}$

FRACTION ADDITION →

COMMON DENOMINATOR

$\frac{2}{3} + \frac{1}{2} = \frac{4}{6} + \frac{3}{6}$

$= \frac{7}{6} = 1\frac{1}{6}$

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11) $8 \times 4 + 3 \times 6$

$32 + 18$

50

* ORDER OF OPERATIONS
* MULTIPLY 8 AND 4 & 3 AND 6.
* THEN ADD 32 AND 18.

12) 36% AS A DECIMAL.

• NEED TO DIVIDE THE PERCENT BY 100.

$\frac{36}{100} = 0.36$

13) $n - 3 = 15$

$+3 \quad +3$

$n = 18$

* TO SOLVE FOR THE VARIABLE, NEED TO DO THE ADDITIVE INVERSE.

• ADD 3 TO BOTH SIDES.

• TO CHECK SOLUTION REPLACE n WITH 18 AND COMPLETE THE OPERATIONS.

14) $\frac{3n}{3} = \frac{60}{3}$

$n = 20$

* TO SOLVE FOR x, YOU NEED THE OPPOSITE OPERATION OF MULTIPLICATION.

15) $AB - 12 \geq 31$

$+12 \quad +12$

$AB \geq 43$

• TO FIND ANTONIO'S BOOKS YOU MUST SUBTRACT 12 FROM ANTONIO, AND THAT MUST BE GREATER THAN OR EQUAL TO 31 BOOKS

• TO SOLVE, OPPOSITE OPERATIONS

16) $x \cdot y$ MEANS $x(y)$, WHEN $x=-5$ AND $y=6$. SUBSTITUTE THE VALUES IN FOR x & y AND COMPLETE THE OPERATIONS.

$(-5)(6) = -30$

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17) $\frac{3.868x}{3.868} < \frac{12.129}{3.868}$

$x < 3.135$

- SOLVE FOR X FIRST.
- DIVIDE BY 3.868
- SINCE X MUST BE LESS THAN 3.135 OR 3.14 THEN ANSWER IS 3.

CHOICES:

$3 < 3.135$ CLOSER

$2 < 3.135$ FARTHER

$4 < 3.135$

$3.14 < 3.135$

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18) ENYA HAS $160, EACH BABYSITTING IS $7.50 PER HOUR. ONCE DONE SHE HAS $340.

EQUATION:

$160 + 7.5x = 340$

$-160 \quad\quad -160$

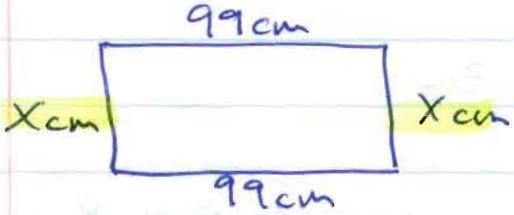
$0 \quad\quad 180$

- COMPLETE THE STEPS.

$\frac{7.5x}{7.5} = \frac{180}{7.5}$

$x = 24$ HOURS SPENT.

19) LENGTH OF RECTANGLE is 99 cm
WIDTH OF RECTANGE is x cm
PERIMETER is AT LEAST 264 cm ⇒ ≥ 264



$P = 2(L) + 2(W) = 2(99) + 2(x)$
$= 198 + 2x$

• SINCE $P \geq 264 \Rightarrow$ $198 + 2x \geq 264$
$-198 \quad -198$
0

$\frac{2x}{2} \geq \frac{66}{2}$

$x \geq 33$

SHORT ANSWERS

1) $4 - 3(2 + 5v) + 7$

$4 - 6 - 15v + 7$

$-2 - 15v + 7$

$5 - 15v$

OR

$-15v + 5$

• MULTIPLY -3 INTO PARENTHESIS.
• ADD CONSTANT NUMBERS. (COMBINE LIKE TERMS)

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2) COST $16.74

(A) $20.99 - 16.74 = \$4.25$

• SUBTRACT COST FROM VALUE GIVEN
• WILL RECIEVE BACK $4.25

CONTINUE (#2)

(B) SALE PRICE IS NOW $14.46

SO, $\begin{array}{r} 20.99 \\ -14.46 \\ \hline 6.53 \end{array}$, THEN CHANGE IS $6.53

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3) DAYTIME TEMPURATURE 72°F, BUT IT IS 13°F TO LOW, SO $72+13 = 85°F$

- SO THE CORRECT TEMPERATURE NEEDS TO BE 85°F

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4) ANTONIO'S SUBDIVISION HOMES IS X.

$\frac{X}{4} + 15 = 47$ HECTOR'S = 47

$-15 \quad -15$

$\frac{}{8} \quad \frac{}{32}$

- TO FIND ANTONIO'S COMPLETE THE EQUATION

$(4)\frac{X}{4} = 32(4)$

$X = 128$ HOMES

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5) X = ELIZABETH'S TIME COOKING.

- JOY COOKED 25 TIMES
- COMPLETE SADMEP
- OPPOSITE OPERATIONS

$3x + 4 = 25$

$-4 \quad -4$

$\frac{}{0} \quad \frac{}{21}$

$\frac{3x}{3} = \frac{21}{3}$ 7

$x = 7$ • ELIZABETH COOKS 7 TIMES.