NAME: _____ BLOCK: _____ DATE: _____

REVISED: 10/03/2017

SOVING EQUATIONS

Module 1 Topic C Study Guide: Turn in on the day of your test for +5 EXTRA CREDIT.

For the following equations, solve for the given variable.

A. One-Step Addition and Subtraction Equations

1. $x+3=-7$ **2.** $x-(-2)=-8$ **3.** $p-\frac{3}{4}=-\frac{1}{3}$

B. One-Step Multiplication and Division Equations

4. $-3x=-18$ **5.** $-p=-7$ **6.** $\frac{x}{-7}=-2$

C. One-Step Reciprocal Equations

7. $\frac{2}{3}x=12$ **8.** $-\frac{1}{5}k=-1$ **9.** $-21=-\frac{3}{5}w$

D. Two-Step Addition and Subtraction Equations

10. $2x-3=9$ **11.** $-2y-1=-17$ **12.** $-5=2t-3$

E. Two-Step Reciprocal Equations

13. $\frac{2}{3}x-3=7$ **14.** $\frac{3}{5}x-1=11$ **15.** $13=-\frac{2}{7}m-5$

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G. Multi-Step Equations

16. $5(x+8)=35$ **17.** $27=-25x+18x-8$ **18.** $-22=4(2x+2)-2x$

H. Variable on both sides equation with some special solutions

19. $6x+7=8x-13$ **20.** $\frac{3}{2}y-y=4+\frac{1}{2}y$ **21.** $-8-3x=x-4(2+x)$

22. $4y=2(y-5)-2$ **23.** $6x-9x-4=-2x-2$ **24.** $2(x-3)=\frac{1}{2}(4x-12)$

I. Proportion Equations

25. $\frac{4}{3}=\frac{8}{x}$ **26.** $\frac{7}{b+5}=\frac{10}{5}$ **27.** $\frac{k-7}{9}=\frac{k}{6}$

28. $\frac{x-3}{x}=\frac{9}{10}$ **29.** $\frac{3}{4}=\frac{t+3}{t-8}$ **30.** $\frac{p+10}{p-7}=\frac{8}{9}$

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J. Real life word problems (Define variable, write equation, and solve.)

1. A boat travels 160 miles in 5 hours. How many miles will the boat travel in two hours?

Define variable: _____

Equation and work:

Sentence: _____

2. a) In 4 hours, Dixie gave haircuts to 12 people. How many haircuts can she give in 3hours?

Define variable: _____

Equation and work:

Sentence: _____

b) If each haircut cost $15, how much money would she make in 3 hours?

3. a) A donut shop bakes 4 trays of donuts every 20 minutes. How many trays of donuts will the donut shop bake in 120 minutes?

Define variable: _____

Equation and work:

Sentence: _____

b) If each tray has 12 donuts, how many donuts will be baked in 120 minutes?

4. Tina sold cookies at her club's bake sale. She spent $18.50 on supplies. She sold her cookies for $0.75 each and made a profit of $24.25. Write and solve an equation to find the number of cookies Tina sold.

Define variable: _____

Equation and work:

Sentence: _____

5. Diamond Gym Club has 100 members. Their membership has been increasing at a rate of about 20 members per year. Platinum Gym Club has 350 members and their membership rate has been decreasing at a rate of about 30 members per year. If these rates continue, how many years will it take for the two clubs to have the same number of members? HINT: $mx + b = mx + b$

Define variable: _____

Equation and work:

Define variable: _____

6. A full-year membership to a gym costs $325 upfront with no monthly charge. A monthly membership costs $100 upfront and $25 per month. For what number of months is it less expensive to have a monthly membership? HINT: $mx + b = mx + b$

Define variable: _____

Equation and work:

Sentence: _____

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7. Leslie bought 5 scarfs and a pair of shoes. Without tax, the total was $66.50. Which is the equation that would identify the price for each scarf if the shoes cost $25? Let s = price of one scarf.

A. $5(25) + x = 66.50$

B. $5s + 66.50 = 25$

C. $5s + 25 = 66.50$

D. $5s – 25 = 66.50$

8. While at the beach, you can go snorkeling for $17 per hour plus a $12 fee for equipment rental. Your bill came to $80. How many hours did you go snorkeling? Write and solve an equation.

Define variable: _____

Equation and work:

Sentence: _____

9. There are 555 students taking Algebra at Jennings. This number has been increasing at rate of about 21 students per year. The number of students taking Geometry is 690 and is decreasing at a rate of 6 students per year. If the trend continues, how many years will it take for the number of students taking Algebra to equal the number taking Geometry? HINT: $mx + b = mx + b$

Define variable: _____

Equation and work:

Sentence: _____

10. Austin has completed five exams with scores of 83, 89, 95, 92, and 79. What must Austin score on his sixth exam to earn at least an average of 88 overall? Write and solve an equation.

Define variable: _____

Equation and work:

Sentence: _____

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K. Using Formulas

1. $V = \frac{1}{3}Bh$ gives the volume of a cone according to the area of its base (B) and its height (h). What is the height of a cone that has a base area of $9cm$ and a volume of $21cm^3$?

2. $A = \frac{1}{2}bh$ gives the area of a triangle according to the lengths of its base (b) and its height (h). What's the height of a triangle whose base is 20in and area is $100in^2$?

FINISH YOUR IXLs!! Math → Algebra 1 → J1, J3, J4, J5, J6, J7, J8, J10, J11