

Math Encounters Final Review Part 1

Name: _____

Chapter 1: Simplifying expressions and solving equations showing all work.

- Use PEMDAS – don't forget the left to right rule for M & D
- Simplifying expressions means you're just putting the terms in their simplest form, you're not solving for the variable
- To simplify, use the distributive property and combine like terms (variables with the same letter and exponent)
- Fractions – multiply across the numerators and denominators (tops and bottoms)
- Cross multiply only when there's an equal sign between two fractions
- You only need common denominators if you're adding or subtracting fractions

1. $10 - 24 \div 6 \cdot 3 + 1$

2. $-5 - 8(-3) - (-2)^4$

3. $3(3d - 4) - 7(5d - 4)$

4. $6y^2 + 9y + 3 - 3y^2 - (-5) + y^2$

5. $\frac{4}{5}k = 10$

6. $4n - 10 = 18 - 4n$

7. $-2(3d - 12) = 15 - 5d$

8. $\frac{3x}{4} = \frac{2x+3}{3}$

9. Solve the equation for y: a) $2y + 3x = 15$

b) $-3y - 4x = 12$

Show the set up and work needed to answer all of the following questions.

10. a) 63 is 28% of what number? b) 69 is what percent of 125?

Final Review: CH 5 — Financial Math

Show the set up and answer for each question. Round all money answers to the nearest hundredths.

1. Jim bought a computer at Appliance City for \$850.50. His town has a 7.5% sales tax. Find the cash price of the computer including tax.
2. A \$1230 TV is marked down by 20%. Find its new sales price.
3. A new car originally cost \$15,000. Find the *percent* of decrease if it is later worth \$14,250.
4. A \$400 necklace is marked down by 15%. Find the new price.
5. A real estate agency takes a 5.8% commission on the sale of each house made by their agents. The realtors themselves then get a 65% commission off of the agency's commission. What is the realtor's commission earned on a house that sold for \$175,000?
6. Tina sells phone systems to small businesses. Her weekly salary includes a base pay of \$600 and a 15% commission on all sales over \$1,000.
 - a. How much would her salary be if she sells \$2200 worth of equipment in one week?
 - b. How much would her salary be if she sells \$3500 worth of equipment in one week?

7. \$200 is invested in an account paying 3.5% **simple interest** for eight years.
- How much interest is earned?
 - What is the maturity value of the account?
8. Find the final balance at the end of ten years on a deposit of \$25,000 in an account paying 1.25% interest if it is compounded:
- quarterly
 - weekly
 - continuously
9. You buy 100 shares of XYZ stock at \$23/share. If you sell the stock at \$32/share, what is the total amount of your gain or loss in dollars? What is your percent gain or loss?
10. One proposal in Congress has been to change the tax laws and have a "flat tax rate". This would require all citizens to pay the same percent of their gross pay to the federal government. If Joe's gross income this year is \$32,580 and the flat tax rate is 16%, how much income tax would Joe owe the government?
11. You are married and made \$125,000 (gross income) last year. Your allowable deductions totaled \$35,000. Use table 5-11 to determine *how much cheaper* it would be to file jointly versus separately? Show your work.

Chapter 5 – Test Formulas & Tables

$$\frac{\text{new value} - \text{original value}}{\text{original value}} \cdot 100$$

$$M = P + I$$

$$I = P r t$$

$$M = P \left(1 + \frac{r}{n} \right)^{nt}$$

$$A = P e^{rt}$$

TABLE 5-11 State Tax Rate Schedule

If Your Filing Status Is:	And the Amount on Line 11b Is		The Tax Is:
	More Than	But Not Over	
Single	\$ 0	\$ 12,750	6% of the amount on line 11b
	\$ 12,750	\$ 60,000	\$765 + 7% of the amount over \$12,750
	\$ 60,000	\$120,000	\$4072.50 + 7.75% of the amount over \$60,000
	\$120,000	—	\$8722.50 + 8.25% of the amount over \$120,000
Head of household	\$ 0	\$ 17,000	6% of the amount on line 11b
	\$ 17,000	\$ 80,000	\$1020 + 7% of the amount over \$17,000
	\$ 80,000	\$160,000	\$5430 + 7.75% of the amount over \$80,000
	\$160,000	—	\$11,630 + 8.25% of the amount over \$160,000
Married filing jointly or qualifying widow(er)	\$ 0	\$ 21,250	6% of the amount on line 11b
	\$ 21,250	\$100,000	\$1275 + 7% of the amount over \$21,250
	\$100,000	\$200,000	\$6787.50 + 7.75% of the amount over \$100,000
	\$200,000	—	\$14,537.50 + 8.25% of the amount over \$200,000
Married filing separately	\$ 0	\$ 10,625	6% of the amount on line 11b
	\$ 10,625	\$ 50,000	\$637.50 + 7% of the amount over \$10,625
	\$ 50,000	\$100,000	\$3393.75 + 7.75% of the amount over \$50,000
	\$100,000	—	\$7268.75 + 8.25% of the amount over \$100,000