

Mth 098 – Intermediate Algebra – **Practice Exam 2**

NOTE: This exam should not be taken as a complete list of possible problems. It is merely intended to be an example of the difficulty level of the regular exam. To best utilize it as a *practice* exam, try to complete the exam without notes or distractions. Try to emulate the classroom environment as much as possible.

1. Simplify each expression.

a. $6pq + p - 3q - 7pq$

b. $2(x + y) - (x - 2y) + 3x$

2. Give the degree of each term.

a. $5xy$

b. ab^3

c. -7

3. Solve each equation. Be sure to check your answer.

a. $p - (p + 4) = 4(p - 1) + 2p$

b. $2x + 3 + x = 9$

c. $3(y + 3) + 2y = 5y + 4$

4. Solve the equation $IR + Ir = E$ for R .

5. Solve the equation $6x - 2y = 18$ for y .

6. Evaluate $x = \frac{-b + \sqrt{b^2 - 4ac}}{2a}$ for $a = 2, b = -3, c = -2$.

7. Suppose Dan ran and walked a total of 18 miles over 4 hours. If he walked for 3 miles at a pace of 20 minutes per mile, what was his pace (minutes per mile) for the remainder of his run? (Solve by setting up an algebraic equation and solving it.) Hint: Use *total minutes* to set up the equation.
8. AT&T long-distance charges \$5/month plus an additional 7¢/minute. If the total bill for long-distance was \$14.38, how many minutes were used? (Solve by setting up an algebraic equation and solving it.)
9. To make a large number of copies, Sandra uses two photocopiers. One copier can produce copies at a rate of 35 copies per minute. The other copier can produce copies at a rate of 40 copies per minute. If Sandra starts both machines at the same time, how long will it take the two machines to produce a total of 1050 copies? (Solve by setting up an algebraic equation and solving it.)

10. The city of Elgin has a sales tax of approximately 7.25%. If the total bill for purchasing a dress shirt was \$31.09, what was the list price of the shirt? (Just SET UP this problem – you do NOT need to solve it.)

11. Express $x < -2$

a. using a number line

b. in interval notation

c. as a solution set. (using set-builder notation)

12. Solve each inequality and give the solution in interval notation.

a. $5 - 3x \leq 11$

b. $\frac{h}{2} - \frac{5}{6} < \frac{1}{3} + h$

c. $14 \leq 2 - 3g < 20$

d. $|x - 3| - 2 < 3$

e. $|2b - 7| > 3$

13. Find the solution set for the equation $|2x + 3| = 7$.