Math 70 – Exam 1 Instructor: Y. Petersen

Name Key

1. Evaluate the expression for $p = -2$: $p^2 + 2p - 5$

$(-2)^2 + 2(-2) - 5$

$4 - 4 - 5 = -5$

2. Divide: $\frac{12}{5} \div \frac{4}{15}$

$\frac{12^3}{5_1} \cdot \frac{15^3}{4_1} = 9$

3. Simplify: $3(4x - 7) - (x + 18)$

$12x - 21 - x - 18$

$11x - 39$

4. Simplify: $\frac{2(18-3)}{-2^2+1}$ $= \frac{2(15)}{-4+1} = \frac{30}{-3} = -10$

5. Translate to algebra and solve: 8 less than the product of 3 and a number is 13. Find the number.

$3x - 8 = 13$

$3x = 21$

$x = 7$

6. Solve: $13 + 2y = 6y + 57$

$-2y \quad -2y$

$13 = 4y + 57$

$-57 \quad -57$

$\frac{-44}{4} = \frac{4y}{4}$

$-11 = y \Rightarrow y = -11$

7. Solve: $7p + 2(11 - 4p) + p = 22$

$7p + 22 - 8p + p = 22$

$0p + 22 = 22$

$22 = 22 \rightarrow$ Infinitely many solutions

8. The sum of 2 consecutive house numbers is 147. Find the house numbers.

$x + (x+1) = 147$

$2x + 1 = 147$

$\frac{2x}{2} = \frac{146}{2}$; $x = 73$, $x+1 = 74$

9. Solve the formula $2d + Ay = cd$ for A

$-2d \quad -2d$

$\frac{Ay}{y} = \frac{cd - 2d}{y}$, $A = \frac{cd - 2d}{y}$

10. 16 is what percent of 80?

$\frac{16}{80} = \frac{x\%\cdot 80}{80}$

$x\% = \frac{16 \div 8}{80 \div 8} = \frac{2}{10} = \frac{1}{5} = 20\%$