11pts (1 pt per question)

Name: **Key**   Points _____ / _____

1. Evaluate the expression when $m = 15$ & $n = 7.5$ for mn/3.5m

rewrite →

$m \cdot n / 3.5 \cdot m$

$15 \cdot 7.5 \div 3.5 \cdot 15$

$\boxed{482.14}$

[PEMDAS]

round to the nearest hundredth

2. Evaluate the expression when $m = 10$ & $n = 1$ & $p = 27$ for $\dfrac{3.5mn + 7p}{\frac{1}{2}m - \frac{1}{3}p}$

$$\frac{(3.5 * 10 * 1 + 7 * 27)}{(\frac{1}{2} \cdot 10 - \frac{1}{3} \cdot 27)} = \frac{(35 + 189)}{5 - 9} = \frac{224}{-4} = \boxed{-56}$$

3. Solve using inverse operations: $3n + 4(n + 2) = 70$ Leave as a fraction

$3n + 4n + 8 = 70$

$7n + 8 = 70$

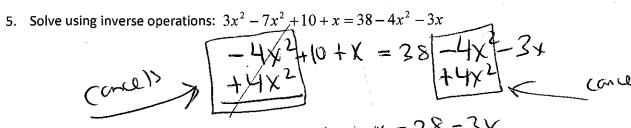$\quad -8 \quad -8$

$\dfrac{7n}{7} = \dfrac{62}{7}$

$\boxed{n = \dfrac{62}{7}}$

4. Solve using inverse operations:

$20 = \dfrac{x}{100} - 35$

$+35 \qquad +35$

$100 \cdot 55 = \dfrac{x}{100} \cdot 100$

$\rightarrow \boxed{X = 5500}$

5. Solve using inverse operations: $3x^2 - 7x^2 + 10 + x = 38 - 4x^2 - 3x$

$$-4x^2 + 10 + x = 38 \boxed{-4x^2} - 3x$$
$$\boxed{+4x^2} \qquad +4x^2$$

cancels → cancels ←

$$10 + x = 38 - 3x$$
$$\underline{-x} \qquad \underline{-x}$$
$$10 = 38 - 4x$$
$$\underline{-38} \quad \underline{-38}$$

$$\frac{-28}{-4} = \frac{-4}{-4}$$
$$\boxed{+7 = X}$$

6. Solve using inverse operations: $\dfrac{-16x \geq 48}{-16 \quad -16}$

$$\boxed{X \leq -3}$$

Since you are dividing by a negative coefficient you switch the inequality symbol.

7. Use the Luhn Algorithm to determine the check digit of the following credit card number:
5466 − 1234 − 5678 − 912__

$$
\begin{array}{cccc}
5 \ 4 \ 6 \ 6 & 1 \ 2 \ 3 \ 4 & 5 \ 6 \ 7 \ 8 & 9 \ 1 \ 2 \ \square
\end{array}
$$

5 4 6 6   1 2 3 4   5 6 7 8   9 1 2 □

2   2   2   2   2   2   2   2

$1+0, +4 + 1+2 + 6 + 2 + 2 + 6 + 4 + 1+0 + 6 + 1+4 + 8 + 1+8, +1 +4$

$62 + ? = 70$

$\boxed{8}$ ← missing digit

① Work Right to left / ② mult. each odd positioned digit by 1
④   ⑤   ③ mult. each even positioned digit by 2

←— divide

8. The quotient of a number divided by four.

$$\frac{x}{4}$$

←— multiply

9. Twenty subtracted from the product of a number and 11.

$$11x - 20$$

10. Write and algebraic equation and solve: The product of five and a number x, is less than the 25.

$$\frac{5x}{5} < \frac{25}{5}$$

$$\boxed{x < 5}$$

11. Use an equation to solve. Start out with: Let......=...... The tickets for the theater cost $8.50 each. Miles bought 5 of them and gave the cashier a one-hundred dollar bill. What was the cost of the tickets?

$$\text{Let } C = \text{cost}$$

$$C = 8.50 \cdot 5$$

$$\boxed{C = \$42.50}$$