Name: _____ Period: _____ Date: _____

Solving Inequalities Assignment

Solve the following Inequalities.

1) $2(2x + 20) \geq 40$

2) $\frac{4(x+3)}{3} \leq 12$

3) $-2(2x + 4) \geq 16$

4) $-4(2x - 2) \leq -x - 9$

5) $2 - \frac{x}{4} \geq \frac{x}{4} + 1$

6) $\frac{3 + x}{2} \leq \frac{x + 1}{3}$

Solve the following compound inequalities

1) $-4 < r - 5 \leq -1$

2) $4v + 3 < -5$ or $-2v + 7 < 1$

3) $7 < -3n + 1 \leq 13$

4) $-2x + 7 > 3$ or $3x - 4 \geq 5$

5) $-3 < 2x - 1 < 7$

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Solving Inequalities Assignment

Solve the following word problems

1) Five less than one-half a number is greater than 12.

2) Sam and Alex play in the same soccer team. Last Saturday Alex scored 3 more goals than Sam, but together they scored less than 9 goals. What are the possible number of goals Alex scored?

3) The length of a rectangle is 5 times its width. The perimeter of the rectangle is at most 104 meters. Find the greatest possible dimensions of this rectangle.

4) The velocity of an object fired directly upward is given by $V = 80 - 32t$, where t is in seconds. When will the velocity be between 32 and 64 feet per second?

5) The antifreeze added to your car's cooling system claims that it will protect your car to -35° C and 120° C. The coolant will remain in a liquid state as long as the temperature in Celsius satisfies the inequality $-35° < C < 120°$. Write this inequality in degrees Fahrenheit.
Hint: $\frac{5}{9}(F - 32)$

6) The height of a horse is measured in a vertical line from the ground to the withers (at the base of the neck). Horses are measured in "hands" where one hand = 4 inches. If a horse is more than an exact number of hands high (*hh*), the extra inches are given after a decimal point, e.g. 14 hands 2 inches is written as 14.2 *hh*. Normal riding horses are between 14.3 *hh* and 17 *hh*, inclusive. Horses shorter than 14.3 hands are called ponies and horses over 17 *hh* are often called draft (or work) horses.

   a.) Write an inequality statement to represent the heights of normal riding horses in inches.

   b.) Write an inequality statement stating the heights, in inches, of equines (horses) that do not fit the normal riding horse height specifications.