Extra Credit Session - Jan 21, 2020
Prep. for Ch 2 Test

One number is 2 times a first number. A third number is 100 more than the first number. If the sum of the three numbers is 380, find the numbers.

\[
\begin{align*}
\text{first} & + \frac{2}{3} \text{ of the number} & + \text{third} = 380 \\
2x & + \frac{2}{3} \cdot 2x & + 100 = 380 \\
\text{Solve for } x & \quad (x = 70) \\
70 & & 140 & & 110
\end{align*}
\]
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Prep for Ch 2 Test

One number is 2 times a first number. A third number is 100 more than the first number. If the sum of the three numbers is 380, find the numbers.

\[ \text{first} + \left[ 2 \times \text{second} \right] + \left[ \text{third} + 100 \right] = 380 \]

\[ x + 2x + x + 100 = 380 \]

Solve for x. \( x = 70 \)

\[ 70 \quad 140 \quad 110 \]
The sum of three consecutive even integers is 78. Find the integers.

Show your work here.
\[
\begin{align*}
\sqrt{2x} + \sqrt{x+2} + \sqrt{x+4} &= 78 \\
\sqrt{x} + x+2 + x+4 &= 78 \\
3x + 6 &= 78 \\
3x &= 72 \\
x &= 24
\end{align*}
\]
\#22 Compound inequalities

Solve. Interval.

\[ 2x + 1 \leq -9 \quad \text{any} \quad 2x \leq 0 \]

\[ -1 \quad -1 \]

\[ \frac{2x}{2} \leq -10 \]

\[ x \leq -5 \quad \text{and} \quad x \leq 0 \]

\[ x \leq -5 \]

\[ (-\infty, -5] \text{ interval.} \]

Final \( \cup \) union final answers:

Start \( \cap \) intersection problem statement:

\[ 2x + 1 \leq -9 \quad \text{or} \quad 2x \geq 0 \]

\[ x \leq -5 \quad \text{or} \quad x \geq 0 \]

\[ (-\infty, -5] \cup [0, \infty) \]
\[ 5 \leq \frac{2}{7}x + 7 \quad \text{AND} \quad \frac{2}{7}x + 7 \leq 10 \]

\[ 5 \leq \frac{2}{7}x + 7 \leq 10 \]

\[ -7 \quad -7 \quad -7 \]

\[ -2 \leq \frac{2}{7}x \leq 3 \]

\[ 7(-2) \leq 7\left(\frac{2}{7}x\right) \leq 7(3) \]

\[ -14 \leq 2x \leq 21 \]

\[ \frac{2}{2} \quad \frac{21}{2} \]

\[ -7 \leq x \leq \frac{21}{2} \]

\[ [-7, \frac{21}{2}] \]

\[ \leq \leq \leq \leq \]

four possibilities
Solve the equation for the specified variable:

\[ Y = AC - 2 \] (Solve for A)

\[ Y + 2 = AC - 2 + 2 \]

\[ Y + 2 = AC \]

\[ \frac{Y + 2}{C} = A \]

Solve \( 7x - 6y = 17 \) for \( y \).

(#'s should be integers or fractions)
\[7x - 6y = 17\]
\[7x - 6y - 7x = 17 - 7x\]
\[-6y = 17 - 7x\]
\[-\frac{6y}{-6} = \frac{17 - 7x}{-6}\]
\[y = \frac{17 - 7x}{6}\]
\[y = -\frac{17 - 7x}{6}\]
\[y = \frac{-17 + 7x}{6}\]
\[\frac{-17}{6} + \frac{7x}{6}\]
\[\frac{7x - 17}{6}\]
\[\frac{7x}{2} - \frac{17}{2}\]
Shureka Washburn has scores of 71, 66, 72 and 115 on her algebra tests.

2. “Average of 78 or higher”

\[
\frac{71 + 66 + 72 + 115 + \frac{f + f}{2}}{6} \geq 78
\]

\[
\frac{324 + 2f}{6} \geq 78
\]

\[
6 \left( \frac{324 + 2f}{6} \right) \geq 6(78)
\]

\[
324 + 2f \geq 468
\]

\[
324 - 324 \geq 468 - 324
\]

\[
2f \geq 144
\]

\[
\frac{2f}{2} \geq \frac{144}{2}
\]

\[
f \geq 72
\]

Shureka must get 72 or higher on her final exam in order to have an average of 78 or higher.
A principal of $5500 is invested in an account paying an annual rate of 4%.
Find the amount in the account after 4 years if the account is compounded semiannually, quarterly, and monthly.

\[ F = P \left(1 + \frac{r}{n}\right)^{nt} \]

\[ F = ? \]
\[ P = 5500 \]
\[ r = 4\% = 4(0.01) = 0.04 \]
\[ n = 2 \]
\[ t = 4 \]

\[ F = 5500 \left(1 + \frac{0.04}{2}\right)^{2 \times 4} \]

\[ F = 6444.13 \]

For quarterly, change \( n = 2 \) into \( n = 4 \)

\[ F = 5500 \left(1 + \frac{0.04}{4}\right)^{4 \times 4} \]

\[ F = 6449.18 \]