Algebra 1 Bellwork Monday, October 13, 2014

1. The perimeter of a rectangle is 144 in. The width is eight less than three times the length. Write and solve an equation to find the dimensions of the rectangle.

2. The sum of three integers is 36. The second integer is 21 more than two times the first. The third integer is eleven less than ten times the second integer. Write and solve an equation to find these three integers.

3. You and a friend leave the same parking lot driving in opposite directions. You drive 50mph and your friend drives 55mph. The total time driving for the two of you is 10 hours. After you've both stopped the two of you are 530 miles apart. Write and solve an equation to find the amount of time each of you has been driving.

4. Jason leaves the dock at 6:00am in his boat at 12 mph. Marques leaves the same dock at 9:00 am in his boat at 18 mph following Jason. At what time will Marques catch up with Jason?

Bellwork Answers

(1)

$P = 2L + 2w$

$144 = 2L + 2(3L - 8)$

$144 = 2L + 6L - 16$

$144 = 8L - 16 \rightarrow 160 = 8L$ $\boxed{L = 20}$

$w = 3(20) - 8 = 60 - 8 = 52$

Dimensions:

$20_{in} \times 52_{in}$

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(2)

$\frac{x}{} + \frac{2x + 21}{} + \frac{10(2x+21) - 11}{} = 36$

$x + 2x + 21 + 20x + 210 - 11 = 36$

$23x + 220 = 36 \rightarrow 23x = -184$

$\frac{23x}{23} = \frac{-184}{23}$ $\boxed{x = -8}$

$\boxed{-8, 5, 39}$

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(3)

$d = r \cdot t$

You	$5t$	5	t
Friend	$55(10-t)$	55	$10-t$

$5t + 55(10 - t) = 530$

$5t + 550 - 55t = 530$

$-5t + 550 = 530$

$-550 \quad -550$

$\frac{-5t}{-5} = \frac{-20}{-5}$ $t = 4$

You → 4 hrs

Friend → $10 - 4 = 6$ hrs

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(4)

$d = r \cdot t$

Jason	$12t$	12	t
Marques	$18(t-3)$	18	$t-3$

Jason leaves at 6:00 am

Marques " " 9:00 am → 3 hrs later

$12t = 18(t-3)$

$12t = 18t - 54$

$-18t \quad -18t$

$\frac{-6t}{-6} = \frac{-54}{-6}$

$t = 9$ hrs

9 hrs after Jason leaves Marques will catch him

6:00 am + 9 hrs

= 3:00 pm