Writing Equations from Situations
Manipulating Algebraic Equations

Name _____

Schools A and B are competing in an academic contest. Correct answers earn 12 points. Incorrect answers lose 5 points. In the final round, School A gives the same number of correct and incorrect answers. School B gives no incorrect answers and the same number of correct answers as School A. School A started the final round with 165 points. School B started with 65. The game ends with the two schools tied. Write and solve an equation to determine how many answers each school got correct in the final round.

An appliance store decreases the price of a 19-in television set 25% to a sale price of $482.63. What was the original price?

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School A		B
$12x$	correct	$12x$ correct
$-5x$	Incorrect	0 Incorrect

$$165 + 12x - 5x = 65 + 12x$$

$$165 + 7x = 65 + 12x$$
$$-65 \qquad -65$$
$$100 + 7x = 12x$$
$$-7x \qquad -7x$$
$$\frac{100}{5} = \frac{5x}{5}$$
$$20 = x$$

An appliance store decreases the price of a 19-in television set 25% to a sale price of $482.63. What was the original price?

Let x = original price

$$x - (0.25x) = \$482.63$$

$$\frac{0.75x}{0.75} = \frac{482.63}{0.75}$$

$$x =$$