

Practice Problem #1

Bob's house is $6(2x-7)$ miles from Joe's Crab Shack.

Bobbie's house is $6(\frac{1}{3}x-2)$ miles from Joe's Crab Shack.

Both houses are equally distanced from Joe's Crab Shack.

If x is their speed in mph, find and prove x .

	Statements	Reasons
1.	$6(2x-7) = 6(\frac{1}{3}x-2)$	<u>Given</u> because this is the info that we already know.
2.	$12x-42 = 2x-12$	<u>Distributive POE</u> because we distributed 6 to $(2x-7)$ and the other 6 to $(\frac{1}{3}x-2)$.
3.	$10x-42 = -12$	<u>Subtraction POE</u> because we subtracted $2x$ from each side.
4.	$10x = 30$	<u>Addition POE</u> because we added 42 to each side.
5.	$x = 3$	<u>Division POE</u> because we divided both sides by 10.

The speed will be 3 mph and we can see this proven above. :P

Practice Problem #2

View the following Conditional statement:

"If I have a cat, then I have a pet."

Using the statement above, construct the 4 other statements.
State if they are true or false. If false, provide a counterexample.

Conditional: If I have a cat, then I have a pet. (True)

Converse: If I have a pet, then I have a cat. (False)

Con-ex.

a dog is a pet, but it is NOT a cat.

Inverse: If I do NOT have a cat, then I do NOT have a pet. (False)

Con-ex.

I have a dog, but I still have a pet.

Contrapositive: If I do NOT have a pet, then I do NOT have a cat. (True)

Bi-Conditional: I have a cat if and only if I have a pet. (True)

Cond = If q , then p

Con. = If p , then q

Inv = If not q , then not p

Cont = If not p , then not q

Bi-Con = if and only if