

Mr. Svarc's Missing \$ Problem...REALLY???

Two men were selling Atlantic Salmon Flies: one man sold 3 flies per dollar and the other man sold 2 flies per dollar.

One day they were both away so they each left 30 flies with a friend. To simplify the reckoning, the friend decided to sell 5 flies for 2 dollars. They sold them all and took in 24 dollars.

When it came to dividing up the sales between the owners...a problem arose. The one who had 30 flies at 3 for a dollar wanted \$10. The other who had 30 flies at 2 for a dollar wanted \$15. In total this made \$25.

The friend only made \$24 which means that they are a dollar short.

WHAT HAPPENED TO THE MISSING DOLLAR???

Old MacDonald's Last Wishes...

Old MacDonald had 17 cows. He died. His will said...

The first daughter Malia gets $\frac{1}{2}$ of the cows.

The second daughter Lainey gets $\frac{1}{3}$ of the cows.

The third daughter Janna gets $\frac{1}{9}$ of the cows.

The daughters could not figure out how to divide the cows.

Mr. Hallihan wanted to help so he loaned a cow to them.

Then the first daughter took $\frac{1}{2}$ of 18 cows = 9 cows.

The second daughter took $\frac{1}{3}$ of 18 or 6 cows.

The third daughter took $\frac{1}{9}$ of 18 or 2 cows.

That makes $9 + 6 + 2 = 17$ cows. So Mr. Hallihan took his cow back home.



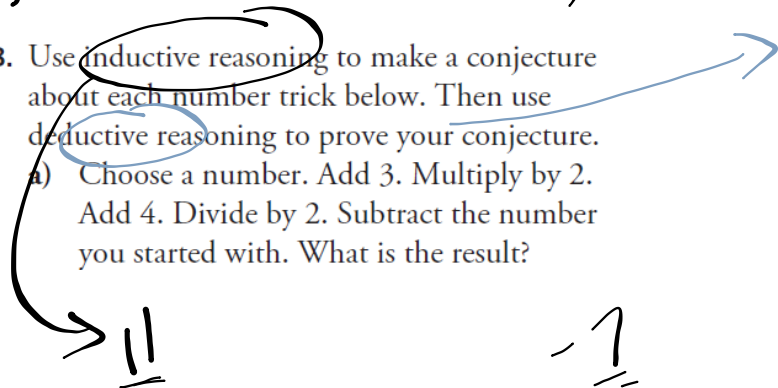
Explain???

Review Questions

P. 34: 8 a, 9, 10

8. Use inductive reasoning to make a conjecture about each number trick below. Then use deductive reasoning to prove your conjecture.
- a) Choose a number. Add 3. Multiply by 2. Add 4. Divide by 2. Subtract the number you started with. What is the result?

$$\begin{aligned}
 & 2(x+3) \\
 & 2x+6+4 \\
 & \underline{2x+10} \\
 & \quad 2 \\
 & \quad \underline{x+5} - x \\
 & \quad \quad \underline{5}
 \end{aligned}$$



Ans+4	28
Ans/2	32
Ans-11	16
■	<u>5</u>

Ans+4	-8
Ans/2	-4
Ans-7	-2
	<u>5</u>

	12.28318531
Ans+4	16.28318531
Ans/2	8.141592654
Ans-π	5

9. Prove that the sum of four consecutive natural numbers is always even.

$$\left\{ \begin{array}{l} 1 + 2 + 3 + 4 \\ 10 + 11 + 12 + 13 \\ x + (x+1) + (x+2) + (x+3) \end{array} \right.$$

$$* \quad x + (x+1) + (x+2) + (x+3)$$

$$4x + 6$$

$$2(2x + 3)$$

↑
even

10. Consider the following statement: The square of the sum of two positive integers is greater than the sum of the squares of the same two integers.
 Test this statement inductively with three examples, and then prove it deductively.

Inductive

$(5+8)^2$	169
5^2+8^2	89
■	

$(10+12)^2$	484
10^2+12^2	244
■	

$(103+295)^2$	158404
103^2+295^2	97634
■	

Deductively...

$(x+y)^2$
 $(x+y)(x+y)$
 $x^2 + xy + xy + y^2$
 $x^2 + 2xy + y^2$

vs $(x^2 + y^2)$

↳ Extra \rightarrow Bigger

Quiz...Inductive/Deductive Reasoning

When finished...work on logic problems!