



Student Interviews

Conjectures

You are going to ask a series of T/F & open number sentence and after they have completed the series ask them if they could state a rule about all those problems. Record their rules.

$$\begin{aligned}0 + 4 &= 4 \\7 + 0 &= 7 \\23 + 0 &= 23 \\23 + 7 &= 23 \\89 + c &= 89 \\c + 0 &= 17\end{aligned}$$

$$\begin{aligned}4 - 4 &= 0 \\7 - 7 &= 0 \\27 - 27 &= 0 \\27 - 35 &= 0 \\975 - 975 &= 0 \\846 - c &= 0 \\7 - c &= 0\end{aligned}$$

$$\begin{aligned}7 \times 0 &= 0 \\4 \times 0 &= 0 \\345 \times 0 &= 0 \\9 \times c &= 0 \\c \times 94 &= 0\end{aligned}$$

$$\begin{aligned}4 \times 1 &= 4 \\7 \times 1 &= 7 \\23 \times 1 &= 23 \\24 \times 1 &= 25 \\c \times 1 &= 9 \\1 \times c &= 76\end{aligned}$$

$$\begin{aligned}4 + 1 &= 1 + 4 \\4 + 5 &= 5 + 4 \\6 + 3 &= 6 + 2 \\34 + 58 &= 58 + 34 \\6 + 4 &= 4 + c \\21 + c &= 47 + 21\end{aligned}$$

Justification and proof

You are going to present the student with a series of statements and ask if it is true and if they believe it is true you are going to ask them to show you why it is true.

- 1) When you add two numbers, you can change the order of the numbers you add and still get the same number.
- 2) When you multiply a number times 1, you get the number you started with.
- 3) When you add two even numbers, you get an even number.
- 4) $a + b - b = a$
- 5) The more digits a number has then the larger it's value.