

## 5.NF Calculator Trouble

### Task

Luke had a calculator that will only display numbers less than or equal to 999,999,999. Which of the following products will his calculator display? Explain.

a.  $792 \times 999,999,999$

b.  $\frac{1}{2} \times 999,999,999$

c.  $\frac{15}{4} \times 999,999,999$

d.  $0.67 \times 999,999,999$

### IM Commentary

Even though students can solve this problem by multiplying, it is unlikely they will. Here it is much easier to answer the question if you can think of multiplying a number by a factor as scaling the number.

### Solution

Since multiplying a positive number by a factor greater than 1 always results in a larger number, the first and third products will be too large to display.

Since multiplying a positive number by a factor less than 1 (but greater than zero) always results in a smaller number, the second and fourth products will be displayed

on his calculator.



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