

Puzzle of the Week

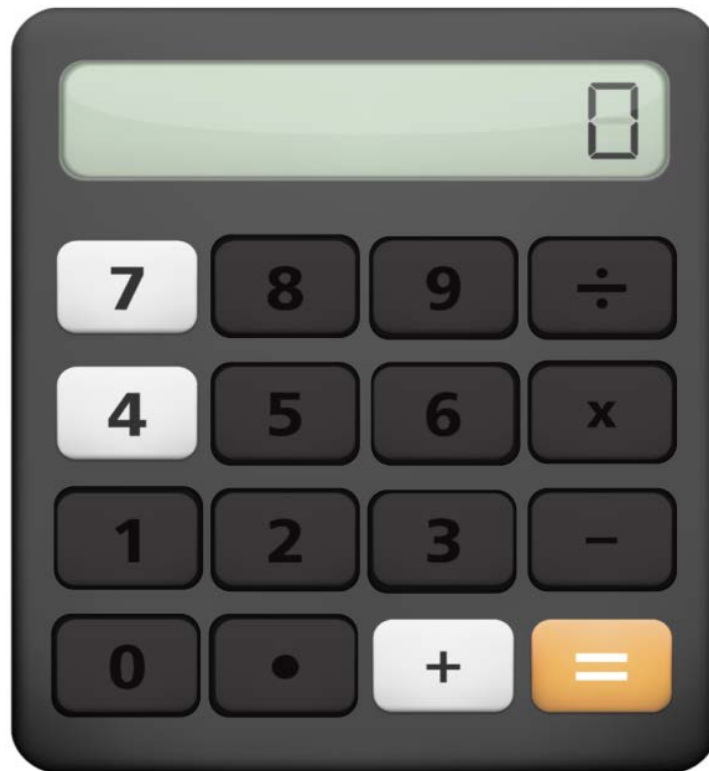
Broken Calculator – 2

You have a calculator that is badly broken. Its only working keys are 4, 7, and +. With this limited ability, it is still possible to make certain numbers. For example:

$$15 = 7 + 4 + 4$$

$$25 = 7 + 7 + 7 + 4.$$

THE CHALLENGE: This calculator cannot make 1, 2, 3, 5, and 6. Find the largest number that cannot be made by this calculator.



EXPLORATION: Replace 4 and 7 by other pairs of numbers. Describe some patterns of what you see.