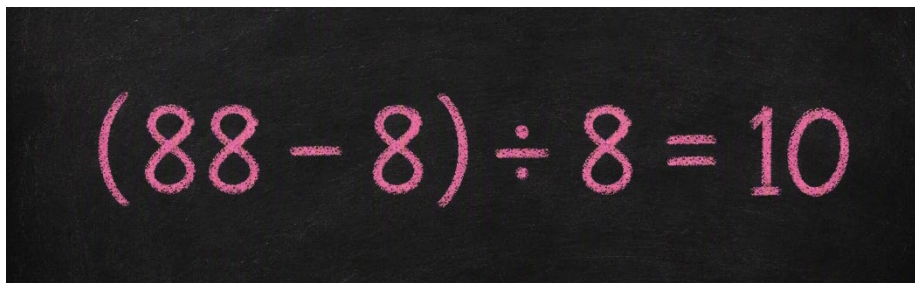


UC Merced Applied Math Problem of the Month

September 2026

Using the digit 8 as many times as needed, create expressions that give each integer from 0 to 20. The figure shows one way to obtain 10.


$$(88 - 8) \div 8 = 10$$

You may use $+$, $-$, $\times$, $\div$, square roots, exponents, and parentheses. You may join digits (such as 88 and 888) or use decimals (such as .8 and .88). You may also use standard functions taught in precalculus or calculus courses, such as $|\square|$, $\log_{\square}\square$, $\exp\square$, and trigonometric functions. However, no digit other than 8 may appear anywhere in an expression.

For an Extra Challenge:

- Use as few 8s as possible.
- Create interesting expressions using standard functions.

To submit your solutions for a chance to win an Amazon gift card, and to find out detailed contest rules, including the policy on AI use,

- scan the QR code, or
- go to <https://bit.ly/UCM-POTM>

