

Name:

1.8 Extension: Scientific notation

By “scientific notation” we mean in the form $a \times 10^k$ where $1 \leq a < 10$ and k is an integer.

1. Convert each value to scientific notation.

(a) 5000

(c) 450

(b) 12,000

(d) 1,060,000

2. Expand each value to regular numeric form. (i.e. an integer)

(a) 9×10^2

(c) 6.22×10^3

(b) 1.5×10^5

(d) 1.41×10^2

3. Calculate each product. Leave in exponential form.

(a) $10^2 \times 10^2$

(b) $10^3 \times 10^5$

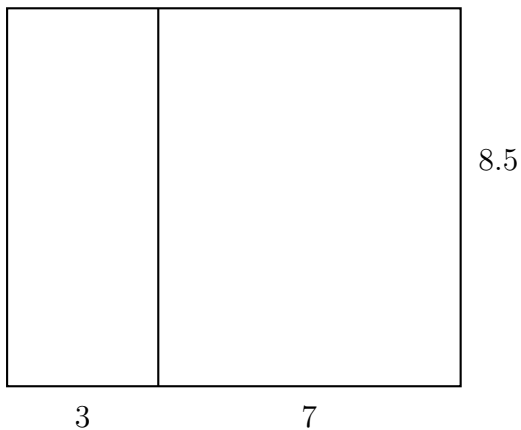
4. Calculate and write as scientific notation.

(a) $22.5 \times 14^2 - 700$

(b) The mean distance of the earth to the moon, 384,000 kilometers.

5. The dimensions of an American football field are 360 feet by 160 feet. Express the area of a football field in square feet in scientific notation.

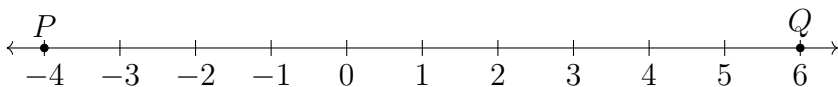
6. A compound shape composed of two rectangles is shown with dimensions marked, both having heights of 8.5 and with base lengths of 3 and 7 respectively.



- (a) Find the perimeter of the smaller rectangle on the left.

- (b) Find the total area of the combined rectangles

7. Given \overleftrightarrow{PQ} as shown on the number line. Divide segment \overline{PQ} into five congruent segments by marking and labeling the points R , S , T , and U on the numberline.



8. Given \overline{PQR} , with $PQ = 4x - 4$, $QR = 2x + 3$, and $PR = 5x + 9$. Find PR .
(show the check)