La Scuola d'Italia / Huson / IB Math: Sequences
14 October 2025

First & last name: SOLUTIONS
Grade:

1.8 Homework: Precision, Scientific notation, Significant figures

In IB we answer exactly or rounded to three significant figures. Copy the calculator display followed by three dots, then round:

$$\pi = 3.1415926\ldots \approx 3.14$$

1. Round each value to three sig figs

   (a) 2,746,984 $\approx$ 2,750,000
   (population of Rome)

   (c) 8,804,190 8,800,000
   (population of New York City)

   ← note: it appears to be only 2 sig figs!

   (b) $\sqrt{2}$ $\approx$ 1.41421356...
   $\approx$ 1.41

   (d) e = 2.718281...
   $\approx$ 2.72

2. Write down the number of significant digits in each value.

   (a) 8 1

   (c) 60 1

   (e) 105.5 4

   (b) 27 2

   (d) 120 2

   (f) 1.7320 5 *

3. Calculate and write as scientific notation, rounding to three sig figs.

   (a) $22.5 \times 14^2 - 665$
   = 3745
   $\approx 3.75 \times 10^3$

   (b) The mean distance of the earth to the moon: 384,400 kilometers.
   $\approx 3.84 \times 10^5$ km

4. The Earth's mass is 5.972×10^{24} kg and the moon's mass is 7.348×10^{22} kg. What is the ratio of the Earth's mass to the moon's mass? Round to three significant figures.

$$r = \frac{5.972 \times 10^{24}}{7.348 \times 10^{22}} = 81.2738\ldots$$
$$\approx 81.3$$