Exercise 29

Perform the following calculations with the correct number of significant figures.

a. 159.31×204.6
b. $5.1125 + 0.67 + 3.2$

c. $7.662 - 7.425$
d. $16.5/3.45$

Solution

Part (a)

204.6 only has four significant figures, so the final answer has four as well. This is the rule for multiplication and division.

$$159.31 \times 204.6 \approx 3.259 \times 10^4$$

Part (b)

3.2 is the least certain measurement (to the tenths place), so the final answer is rounded to the tenths place. This is the rule for addition and subtraction.

$$5.1125 + 0.67 + 3.2 \approx 9.0$$

Part (c)

Both numbers have uncertainty in the thousandths place, so the final answer is rounded to the thousandths place. This is the rule for addition and subtraction.

$$7.662 - 7.425 = 0.237$$

Part (d)

16.5 and 3.45 only have three significant figures, so the final answer has three as well. This is the rule for multiplication and division.

$$\frac{16.5}{3.45} \approx 4.78$$