1 *Consider the number* -4.

a *What is its reciprocal (multiplicative inverse)?*

Since $-4 = -\frac{4}{1}$, the reciprocal of -4 is

$$-\frac{1}{4}.$$

(Also notice that $-4 \cdot -1/4 = 1$, as should happen with multiplicative inverses.)

b **Extra credit:** *What is its opposite (additive inverse)?*

Since the opposite of a negative number is positive, the opposite of -4 is

$$4.$$

(Also notice that $-4 + 4 = 0$, as should happen with additive inverses.)

2 *Evaluate (work out the value of) the following arithmetic expressions. (Show at least one intermediate step for each part.)*

a $(-9) \cdot (-19)$

$$(-9) \cdot (-19) = 9 \cdot 19 = 171.$$

b $\left(-\frac{5}{6}\right) + \left(\frac{7}{15}\right)$

$$\left(-\frac{5}{6}\right) + \left(\frac{7}{15}\right) = -\frac{5 \cdot 5}{6 \cdot 5} + \frac{7 \cdot 2}{15 \cdot 2} = \frac{-25}{30} + \frac{14}{30} = \frac{-(25-14)}{30} = -\frac{11}{30}.$$