

1. Compute each of the following on a 7-hour clock:

(a)  $3 \oplus 5$

$$3 \oplus 5 = 8(\text{mod } 7) = 1$$

(b)  $4 \otimes 6$

$$4 \otimes 6 = 24(\text{mod } 7) = 3$$

(c)  $2 \ominus 4$

$$2 \ominus 4 = -2(\text{mod } 7) = 5$$

2. Express each of the following as a reduced rational number.

(a) The ratio of the number of empty circles to the total number of circles in this picture:



$$\frac{3}{9} = \frac{1}{3}$$

(b) The ratio of an inch to a foot.

$$\frac{1 \text{ inch}}{1 \text{ foot}} = \frac{1 \text{ inch}}{12 \text{ inches}} = \frac{1}{12}$$