Problem Solving Strategy 5.1

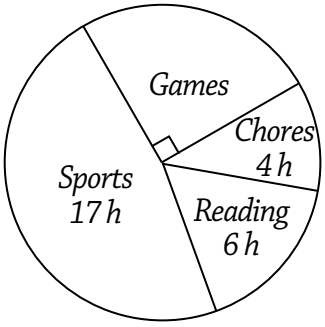
Pie Charts: Unitary Method

Name _____ Date _____

Example 5.1A

Solve the following problem. Show your working clearly.

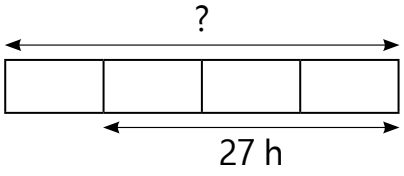
The pie chart shows the time Liam spent on various activities during a school holiday.
How many hours did he spend on the activities in all?



Solution

$1 - \frac{1}{4} = \frac{3}{4}$

17 h + 6 h + 4 h = 27 h



3 units = 27 h

1 unit = 27 h ÷ 3 = 9 h

4 units = 9 h x 4 = 36 h

He spent 36 h on the activities in all.

Think Mathematically

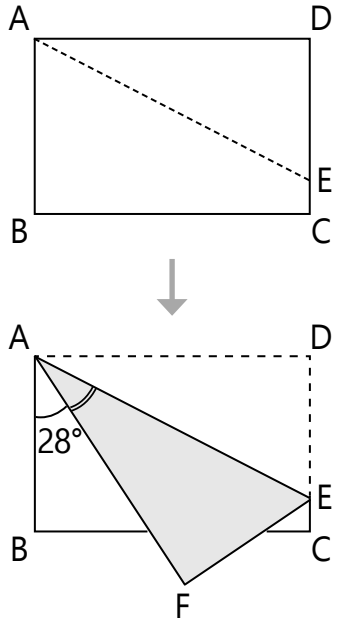
The time spent on games is a quarter of the total time. The time spent on sports, reading and chores together makes up 3 quarters of the total time.

Apply the unitary method to find the value of a quarter, then calculate the total time.

Example 7.1B

Solve the following problem. Show your working clearly.

Ahmad folded a rectangular sheet of paper ABCD along the dotted line AE as shown below.
If ∠FAB = 28°, find ∠EAF.



Solution

∠DAF = 90° − ∠FAB
= 90° − 28°
= 62°

∠EAF = ∠DAF ÷ 2
= 62° ÷ 2
= 31°

∠EAF is 31°.

Think Mathematically

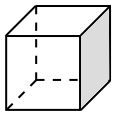
Folding the rectangle at one of its corners creates two equal angles, ∠DAE and ∠EAF.

To find ∠EAF, subtract the given angle ∠FAB (28°) from 90° to determine the total of the two equal angles. Then, divide this total by 2.

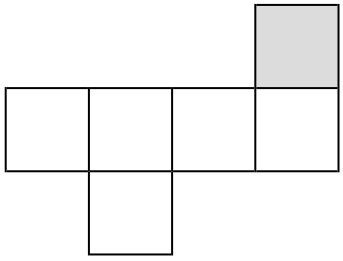
Practice 7.2

Solve the following problems. Show your working clearly.

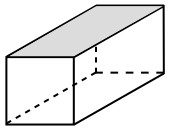
1. The geometric figure shows a cube with one of its faces shaded.



Which face is opposite the shaded face?
Mark it with a tick (√) on the net.



2. The geometric figure shows a cuboid with its top face shaded.



Which face is the base of the cuboid?
Mark it with a tick (√) on the net.