

1.8 Use a Problem Solving Plan

PROBLEM SOLVING PLAN USING MODELS



Example

One day Jay and Sally picked strawberries for 3 hours. In all they picked 60 strawberries.

~~Jay~~ picked 8 fewer than Sally.

- A. How many strawberries were picked in all? 60
- B. How long did Jay and Sally work? 3 hours
- C. Who worked longer? worked same amount
- D. Who picked more? Sally
- E. If Sally picked x strawberries, how many did Jay pick? $x - 8$
- F. If Jay picked y strawberries, how many did Sally pick? $y + 8$

Example

Bob can shovel the snow off the driveway in 2 hours. Laura can shovel the same driveway in 3 hours.

- A. Alone, how much of the driveway can Laura shovel in one hour? $\frac{1}{3}$
- B. Alone, how much of the driveway can Bob shovel in one hour? $\frac{1}{2}$
- C. If they shovel the driveway together using two shovels, can they finish in one hour?

$$\frac{1}{3} + \frac{1}{2} = \frac{2}{6} + \frac{3}{6} = \frac{5}{6} \quad \text{no}$$

Example

The swim team roster shows that Gene can swim 8 laps in 5 minutes. Sue can swim 10 laps in the same amount of time.

A. How many laps can Gene swim in 10 minutes? 16 laps

B. How long does it take Sue to swim 4 laps? 2 min.

C. In 30 minutes, Sue will swim how many more laps than Gene?

$$\begin{array}{r} \text{Sue} \\ 60 \end{array} - \begin{array}{r} \text{Gene} \\ 48 \end{array} = 12 \text{ more laps}$$

Example

A school bus can hold a maximum of 66 students. The bus is five-sixths full. One-fifth of the students on the bus get off at the first stop.

A. Is the bus full? no

B. How many students are on the bus when it leaves the school? $\frac{5}{6} \cdot \cancel{66} = 55$ students

C. How many students get off the bus at the first stop? $\frac{1}{5} \cdot \cancel{55} = 11$ students

Example

Honor students from 3 high schools in Dallas went on a hayride. Each school invited the same number of students, but at the last minute some students could not attend. In the end, 95 students went on the hayride.

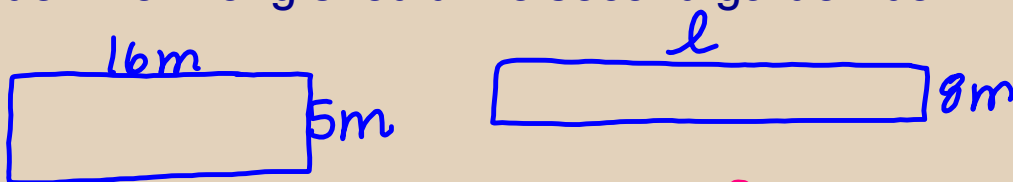
A. If n students could not attend, how many were invited? $n + 95$

B. Which school invited the most students?
no school invited the most

Example

$$A = lw$$

Haley wants two rectangular gardens to have equal areas. The first garden is 5 meters by 16 meters. The second garden is 8 meters wide. How long should the second garden be?



$$16 \cdot 5 = l \cdot 8$$

$$80 = l \cdot 8$$

$$l = 10m$$