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## Mystery addition Problem

Correct use of units is important in calculations. Sometimes, two plus two does *not* equal four, as in “two feet plus two inches equals...” Sometimes,  $10 + 120 = \frac{1}{5}$ , as in “10 min+120 sec =  $\frac{1}{5}$  hour.” Sometimes... why don't you see for yourself?

Fill the blank spaces with units (inches, dimes, hours, etc.) in a way that makes the addition examples correct. Try to invent more than one set of answers for each question.

**Example:**  $1 \dots + 1 \dots = 3 \dots$

Possible solutions:

1 pint + 1 cup = 3 cups *or*

1 quarter + 1 eighth = 3 eighths *or*

1 dime + 1 nickel = 3 nickels

1.  $3 \dots + 2 \dots = 32 \dots$
2.  $3 \dots + 2 \dots = 23 \dots$
3.  $3 \dots + 2 \dots = 17 \dots$
4.  $3 \dots + 2 \dots = 35 \dots$
5.  $3 \dots + 2 \dots = 182 \dots$
6.  $3 \dots + 2 \dots = 123 \dots$

## Hints

If the unit of the sum coincides with the unit of one of the addends (and let's assume it is so), then it's possible to find the relationship between the units of two addends.

Example:

In problem **1**

$3$  (one unit) +  $2$  (another unit) =  $32$  (one of those two units).

If  $3$  and  $32$  are in the same units, then

$29$  (one unit) =  $2$  (another unit), which is strange.

If, on the other hand,  $2$  and  $32$  are in the same units, then

$3$  (one unit) =  $30$  (another unit),

or, in other words, one unit is ten times bigger than the other one. What can these two units be?

## Answers

1. Decades, years, years *or*  
dimes, pennies, pennies.
2. Weeks, days, days.
3. Days, weeks, days.
4. Weeks, weeks, days.
5. Hours, minutes, minutes *or*  
minutes, seconds, seconds.
6. Minutes, hours, minutes *or*  
seconds, minutes, seconds.

In all these problems, other answers may also be possible.

# Solutions