

$$3 \times 5 = 15$$

$$4 \times 4 = 16$$

$$5 \times 3 = 15$$

$$6 \times 8 = 48$$

$$7 \times 7 = 49$$

$$8 \times 6 = 48$$

$$4 \times 6 = 24$$

$$5 \times 5 = 25$$

$$6 \times 4 = 24$$

$$(n-1) \times (n+1)$$

$$n \times n = n^2$$

$$10 \times 12 = 120$$

$$11 \times 11 = 121$$

$$12 \times 10 = 120$$

$$n^2 - 1$$

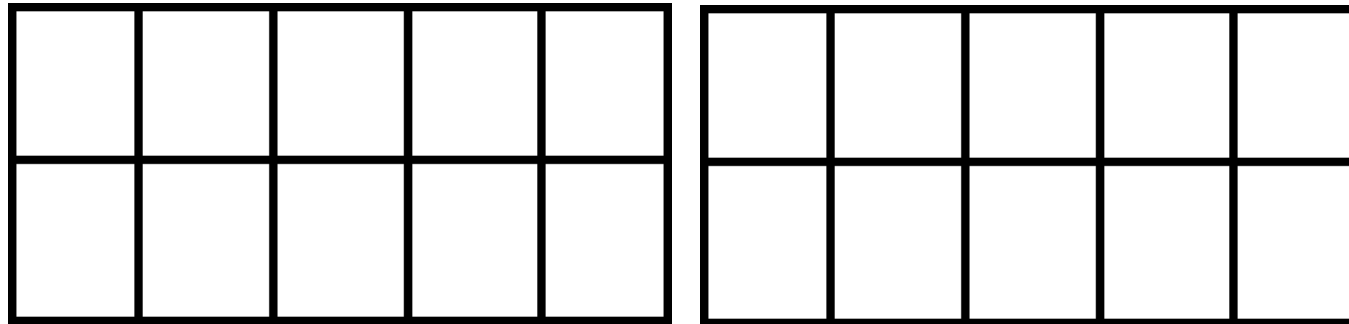
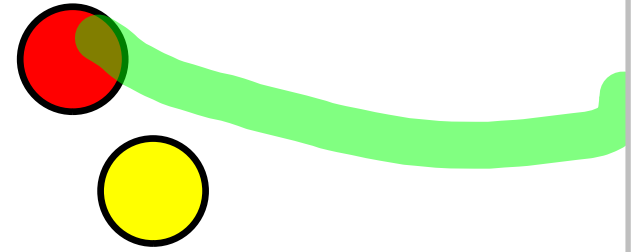
$$11 \times 13 = 143$$

$$12 \times 12 = 144$$



Timer - persistence.swf

$$9 + 7 = \underline{16}$$

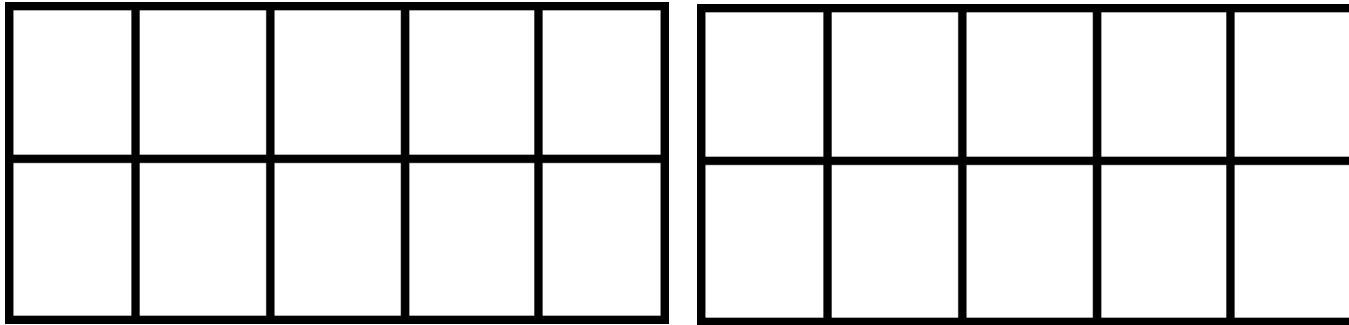
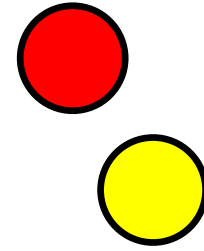


Doubles / Near Doubles.

FACT

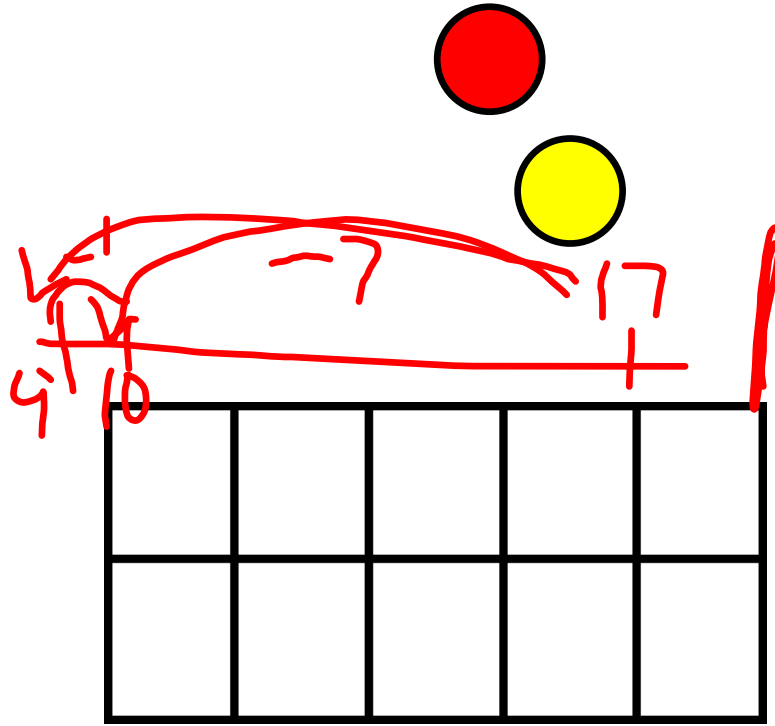
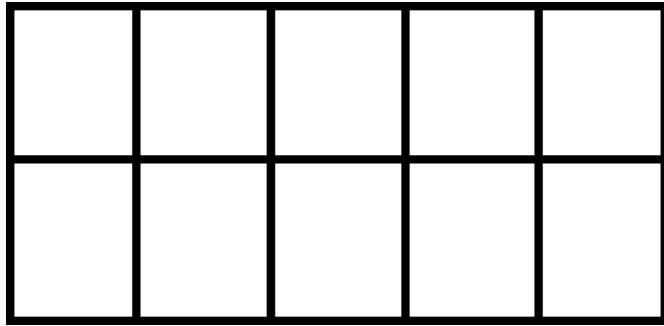
Make Ten

$$8 + 5 = \underline{13}$$
$$10 + 3$$



make Ten

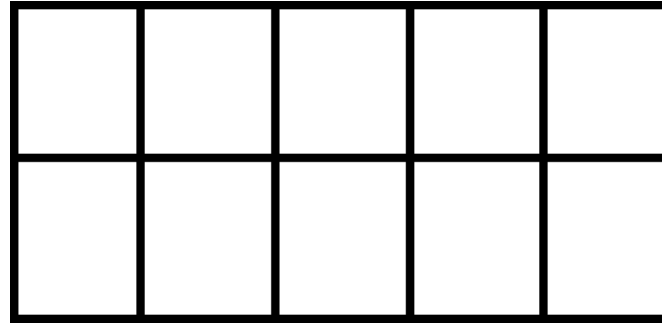
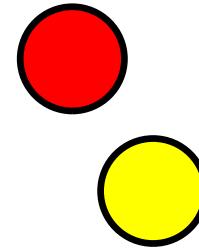
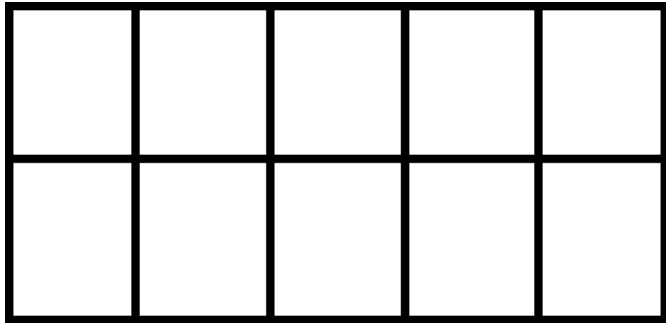
$$17 - 9 = \underline{8}$$



Compensation  $-10 + 1$

Think Addition  $9 + \underline{\quad} = 17$

$$6 + 6 = \underline{12}$$



$$6 + 7 = \underline{13}$$

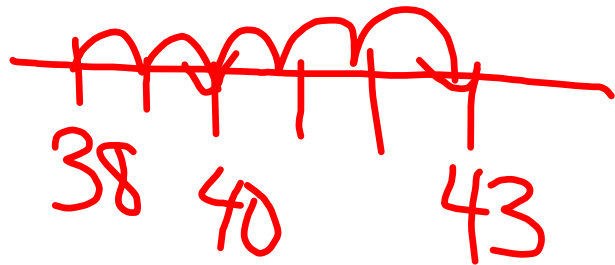
$$6 + 6 + 1 = 13$$

$$6 + 8 = \underline{14}$$

$$7 + 7 = 14$$

$$38 + 5 = \underline{43}$$

Make Tens



$$38 + 5$$

$$30 + 13 = 43$$

$$27 + 6 = \underline{\quad}$$

$$30 + 3 = 33$$

$$20 + 7 + 6 =$$

$$20 + 13 = 33$$



$$38 + 54 + 22 + 36 = 150$$

$$10 + 10 + 30 + 50 + 20 + 30$$

$$38 + 22 + 50 + 30$$

$$60 + 90 = 150$$

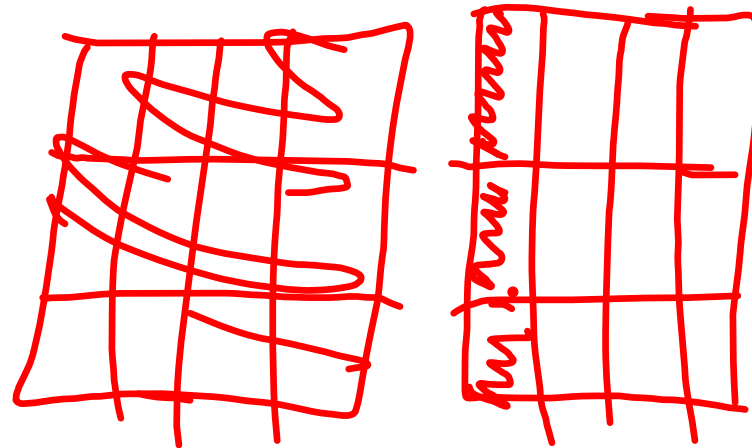
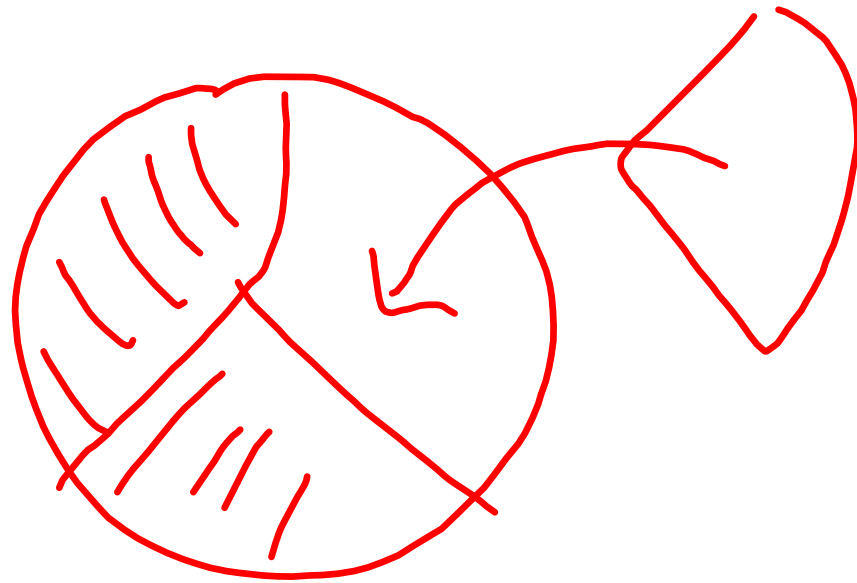
Compatible  
Pair.

$$2.7 + 4.9 + 1.3 + 3.1$$

$$4.0 + 8.0 = 12.0$$

$$\frac{2}{3} + \frac{1}{4} + \frac{1}{3}$$

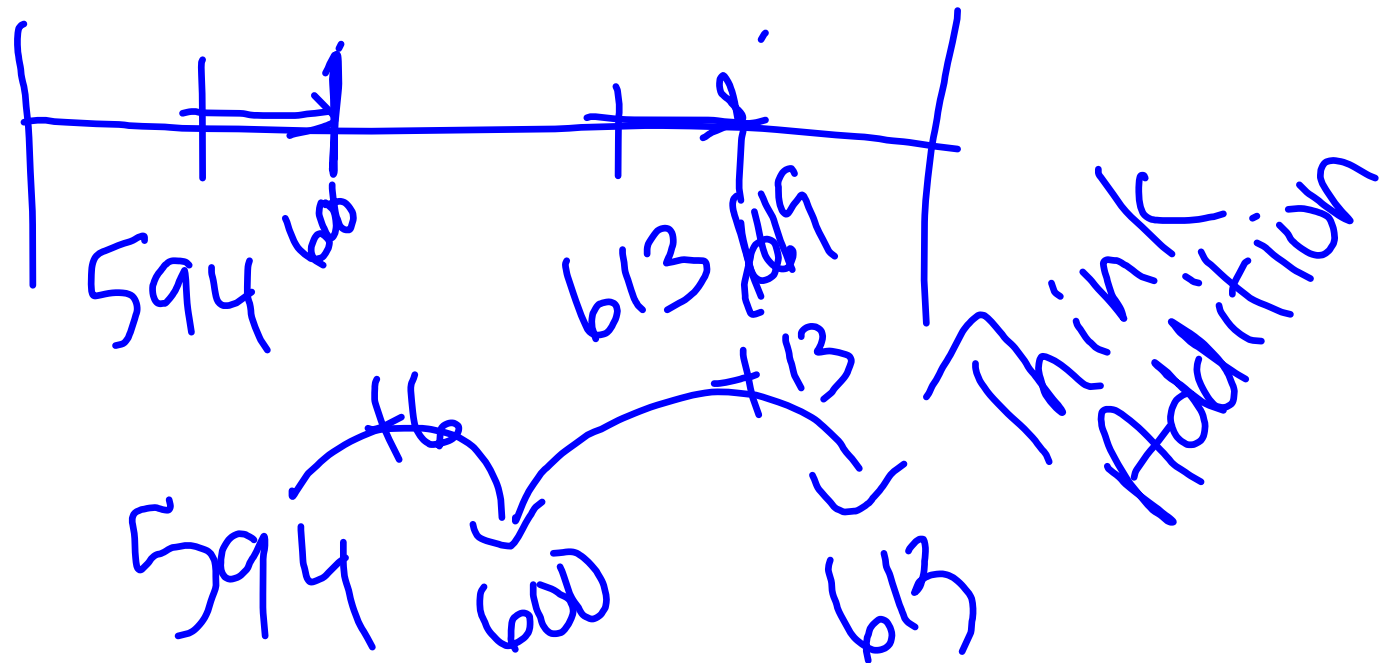
Handwritten red annotations: The fractions  $\frac{2}{3}$  and  $\frac{1}{3}$  are circled. Lines connect these circles to a central point above the  $\frac{1}{4}$  term. Below this point, the number 4 is written with a vertical line through it, indicating a common denominator.



$$613 - 594 = \underline{19}$$

$$619 - 600$$

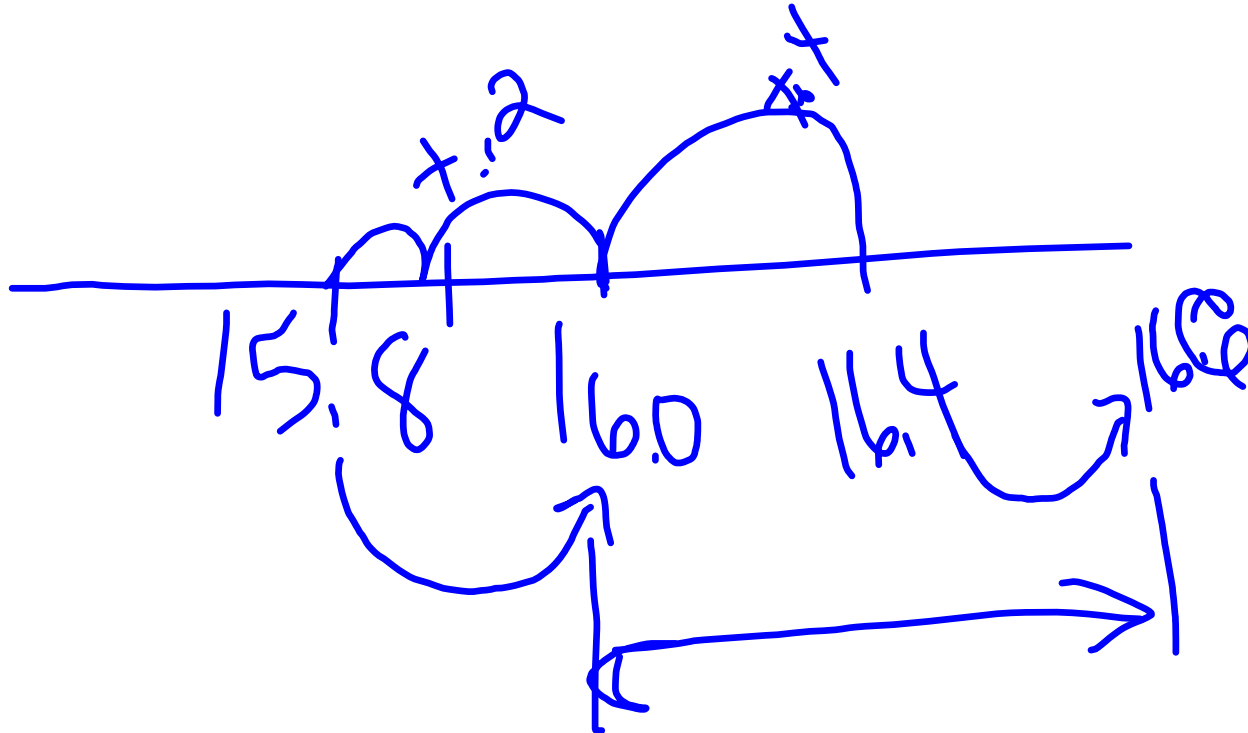
$$594 = 513 + 81$$



$$16.4 - 15.8 = \underline{0.6}$$
$$16.6 - 16.0$$

$$\begin{array}{r} 14 \\ - 8 \\ \hline 6 \end{array}$$

$$1.4 - 0.8$$



$$39 \times 3 = 117$$

$$4 \times 3 = 12$$

$$40 \times 3 = 120$$

$$117$$

Front End



$$3 \times 30 + 3 \times 9$$

$$90 + 27 = 117$$

$$3(30 + 9)$$

$$25 \times 16 = 25 \times 4 \times 4$$



$$100 \times 4 = 400$$

Halving  
+ Doubling

$$\begin{array}{r} 25 \times 10 + 25 \times 6 \\ 250 + 150 \end{array} \quad \begin{array}{r} 25 \times 16 \\ 50 \times 8 \end{array}$$

$$15 \times 6$$

$$\begin{array}{c} \nearrow \\ 15 \times 3 \times 2 \\ \underbrace{\hspace{2cm}} \\ 45 \end{array}$$

$$(15 \times 2) \times 3$$

$$30 \times 3 = 90$$

Associative Property

$$(15 \times 2) \times 3 \quad (7 + 3) + 5$$

$$15 \times (2 \times 3) \quad 7 + (3 + 5)$$



