

# HW 3: Solutions / Answers -

- ① (a) Rep addition      (b) # line model.  
 (c) set model      (d) # line model.
- ② (a) Array model      (b) Cart. product model  
 (c) Number line model w/ skip counting      (d) Set model  
 (e) Area model      (f) Mult. tree model

- ⑦ (a) Commutative      (b) Distributive      (c) Mult. by 0  
 (d) Distributive prop      (e) Assoc. prop.  
 (f) Mult. identity prop.

- ⑬ (a) Distr.      (b) Distr.      (c) Distr., associative, mult by 0.

(a)  $7 \cdot 14 + 3 \cdot 14 = (7 + 3) \cdot 14$   
 (b)  $24(17 + 3)$   
 (c)  $36 \cdot 15 - 12 \cdot 45 = 36 \cdot 15 - 12 \cdot 3 \cdot 15$   
 $= (36 - 12 \cdot 3) \cdot 15$   
 $= (36 - 36) \cdot 15$   
 $= 0 \cdot 15 = 0$

- ⑬ (a) Rep. sub.  
 (b) Partition  
 (c) Missing factor / rep sub.

⑰ (c)  $25 \xrightarrow{-8} 17 \xrightarrow{-8} 9 \xrightarrow{-8} 1 \rightarrow \text{done}$        $25 \div 8 = 3 \text{ R } 1$   
 $7 \xrightarrow{-14} \text{done}$        $7 \div 14 = 0 \text{ R } 7$

$$(20) \quad y \div 5 = 5 \text{ R } 4$$

(a) This says if we take 5 groups of 5 from  $y$ , four objects are left so  $y = 5 \cdot 5 + 4 = 29$ .

$$(b) \quad 20 \div x = 3 \text{ R } 2$$

~~will be left over~~

There <sup>are</sup> 3 groups of  $x$  things in 20 w/ 2 left out.

So 3 groups of  $x$  things is 18.

$$18 \div 3 = 6 \quad \text{so } \boxed{x=6}$$

(21)

(b)

$$4^8 \cdot 7^8 = (4 \cdot 7)^8 = \boxed{(28)^8}$$

(d)

$$\boxed{x^{16}} = x^7 \cdot x^9 = x^{7+9}$$

(f)

$$(t^3)^4 = t^{3 \cdot 4} = t^{12}$$

for example

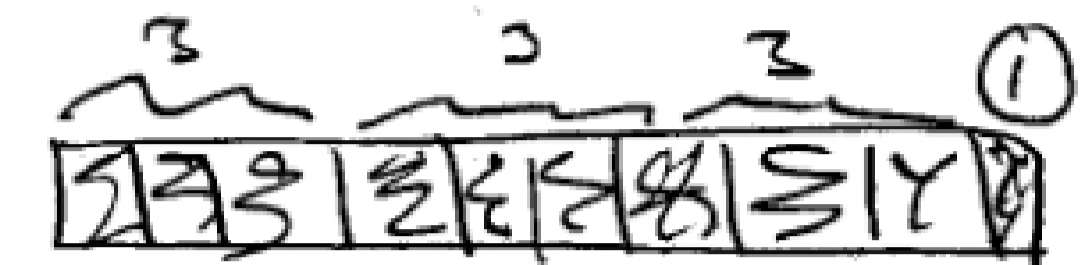
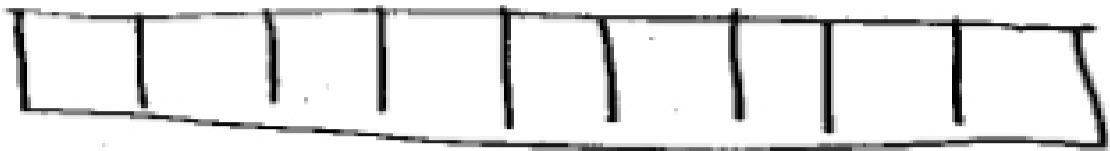
(26)

To solve the problem  $20 \div 3$  ✓

Using number strips the student could first form two strips of ten. Then ask how many strips of length three does it take to cover the two ten strips - Does it cover exactly? If not, what's the most number of 3-strips we can use w/o going

Over the edges.  
When we use

what's left  
this many?



39.

D

6 R 2