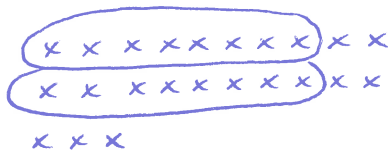


Review

① 23 rocks

(A) base 8

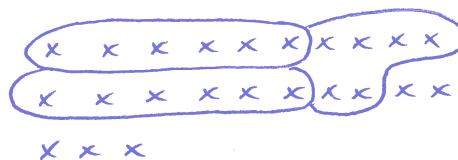


2 groups of 8 ; 7 left

"27"

(we write 27_{eight})

(B) base 6



3 groups of 6 ; 5 left

"35"

(we write 35_{six})

② (A) $2302_{\text{five}} = (2 \times 125) + (3 \times 25) + (0 \times 5) + (2 \times 1)$

$= 250 + 75 + 0 + 2$

$= \boxed{327 \text{ units}}$



think of 2 units, 0 longs, 3 flats & 2 cubes.

(B) $88 \text{ units} = 75 + 10 + 3$

$\begin{array}{ccc} / & / & / \\ 3 \times 25 & 2 \times 5 & 3 \times 1 \end{array}$

$\boxed{323_{\text{five}}}$

③ MAYAN

BABYLONIAN

(A) 24 ...



(B) 76 ...



(C) 434 ...



$(7 \times 60) + 14$

- ④ (A) part-part whole (whole unknown)
 (B) join (change unknown)
 (C) separate (start unknown)

(A)	(B)	(C)
easy	fairly easy	quite hard
↑	↑	↑
quite easy to directly model	can still be directly modeled but children need to keep track of how much is added to 7 to get 13	difficult to model since the starting value is not provided

- ⑤ (A) Gather 16 cubes; remove 9 of them.
Count the ones remaining.

(B) EX: Counting Down strategy

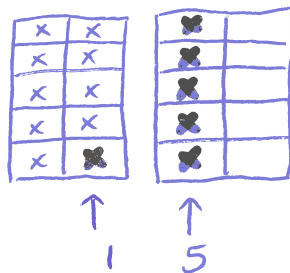
$\begin{matrix} & 1 & 2 & 3 & 4 & 5 & 6 & 7 & 8 & 9 \\ & \underbrace{} & \underbrace{} & \underbrace{} & \underbrace{} & \underbrace{} & \underbrace{} & \underbrace{} & \underbrace{} & \underbrace{} \\ 16 & 15 & 14 & 13 & 12 & 11 & 10 & 9 & 8 & 7 \\ & & & & & & & & & \uparrow \end{matrix}$

(C) EX: Using 10

$$\begin{array}{l}
 16 - 9 \\
 16 - 6 = 10 \\
 10 - 3 = \textcircled{7}
 \end{array}
 \left. \vphantom{\begin{array}{l} 16 - 9 \\ 16 - 6 = 10 \\ 10 - 3 = \textcircled{7} \end{array}} \right\} \text{or} \left\{ \begin{array}{l} 16 - 9 \\ 16 - 10 = 6 \\ 6 + 1 = \textcircled{7} \end{array} \right.$$

⑥ $15 - 9$

(A) $9 + \underline{\quad} = 15$



$1 + 5 = \textcircled{6}$

Count the shaded squares to obtain the product 23×14

$$\begin{array}{r}
 23 \\
 \times 14 \\
 \hline
 12 \quad \leftarrow \text{Northeast shading} \\
 80 \quad \leftarrow \text{Southeast " } \\
 30 \quad \leftarrow \text{Northwest " } \\
 200 \quad \leftarrow \text{Southwest " } \\
 \hline
 322
 \end{array}$$

10

351×218

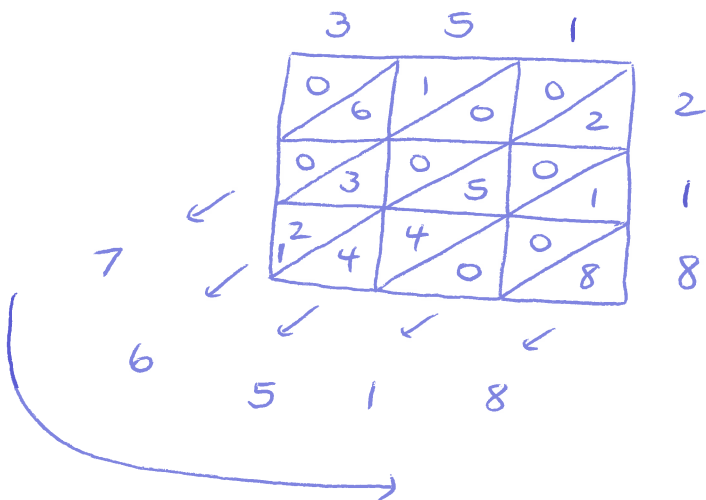
(A)

	300	50	1	
60000	10000	200	200	200
3000	500	10	10	10
2400	400	8	8	8



sum of entries = 76,518

(B) Lattice



76,518