

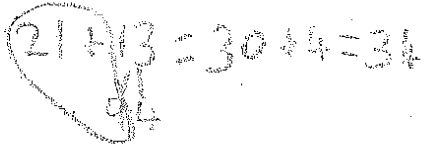
## Solving maths problems – Students' work samples

### Examples of students' working

These examples are generally listed from the most sophisticated to the least sophisticated. The mean ability of students using each strategy largely follows the stages of the number framework. Click on the link [Analysis of student responses for NM1328](#) for the breakdown of how many students answered using different strategies.

### Partitioning using rounding and compensation to cross boundaries

(a)  $21 + 13$



Answer: 34

(b)  $37 + 28$

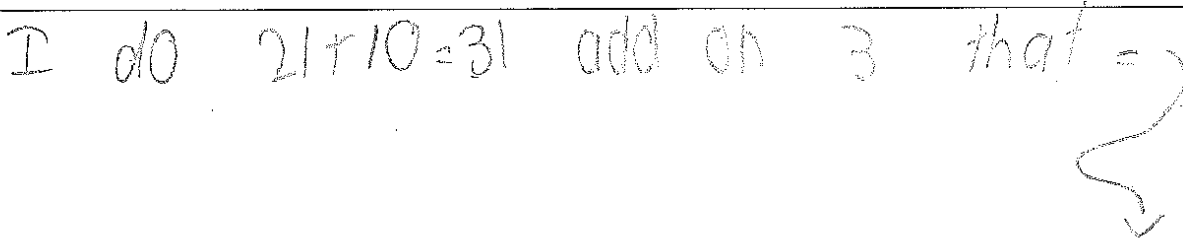
$30 + 30 = 60$   
 $60 - 2 = 58$   
 $58 + 7 = 65$

Answer: 65

### Partitioning by rounding to a tidy number then compensation

(a)  $21 + 13$

I do  $21 + 10 = 31$  add on 3 that =



Answer: 34

(b)  $37 + 28$

$30 + 28 = 58 + 7 = 65$

Answer: 65

**Place value partitioning using tens and ones**

(a)  $21 + 13$

20 + 10 = 30 then plus 1 and the 3 together  
 so it adds up to 34

Answer: 34

(b)  $37 + 28$

$30 + 20 = 50$   
 $7 + 8 = 15$

Answer: 65

**Place value partitioning expressing tens as ones**

(a)  $21 + 13$

$2 + 1 = 3$      $1 + 3 = 4$

34 ←

Answer: 34

(b)  $37 + 28$

$3 + 2 = 5$   
 $7 + 8 = 15$

Answer: 20

Visually displaying partitioning or other PV strategy

(a)  $21 + 13$

21 30 34

Answer: 34

(b)  $37 + 28$

37 50 79

Answer: 79

Counting strategies

(a)  $21 + 13$

~~XXXXXXXXXXXXXXXXXXXX~~ - 21  
 OOOOOOOOOOOO - 13  
 together counting on.

Answer: 34

Stick figures with numbers: 3, 1, 8, 5, 2, 5, 5, 10, 8, 13, 14, 16, 19, 21, 15, 12, 15, 20

Answer: 34

(b)  $37 + 28$

|||||   |||||   |||||   |||||   |||||   |||||   |||||   |||||   |||||  
 |||||   |||||   |||||

Answer: 75

Vertical addition algorithm(b)  $37 + 28$ 

$$\begin{array}{r} 37 \\ + 28 \\ \hline 65 \end{array}$$

Answer: 65