Clay Pottery

Lizzie and Zela are interested in making pottery. The following chart shows how much clay is needed to make different projects.

<table>
<thead>
<tr>
<th>Project</th>
<th>Pounds of Clay Needed</th>
</tr>
</thead>
<tbody>
<tr>
<td>Small Plate</td>
<td>2 1/2</td>
</tr>
<tr>
<td>Small Bowl</td>
<td>1 1/2</td>
</tr>
<tr>
<td>Large Bowl</td>
<td>3 1/4</td>
</tr>
<tr>
<td>Dinner Plate</td>
<td>4 1/2</td>
</tr>
<tr>
<td>Mug</td>
<td>3/4</td>
</tr>
</tbody>
</table>
Item Prompt

Zela wants to make a set of 6 mugs. The clay only comes in 1-pound blocks.

What is the least number of blocks of clay Zela will need to make 6 mugs?

Explain how you figured out your answer.

Note: Zela knows that leftover clay from each block can be squished together and used.

Sample Responses

**Sample Response A**

1 mug $\frac{3}{4}$ + 2 mugs $\frac{3}{4}$ + 3 mugs $\frac{3}{4}$ = 9/4

4 mugs $\frac{3}{4}$ + 5 mugs $\frac{3}{4}$ + 6 mugs $\frac{3}{4}$ = 9/4

9/4 + 9/4 = 18/4

She will need 18/4 of clay to make six mugs because 1 mug is $\frac{3}{4}$. For you can get your answer add all of them.

**Sample Response B**

75 + 75 = 150

150 + 150 = 300

300 + 300 = 600

I doubled 75 3 times and got 600 which is equal to 6 pounds of clay.

**Sample Response C**

$\frac{3}{4}$ + $\frac{3}{4}$ + $\frac{3}{4}$ + $\frac{3}{4}$ + $\frac{3}{4}$ + $\frac{3}{4}$ = 18/4

$1 = \frac{4}{4} = 14/4 - 4/4 = 10/4 - 4/4 = 6/4 - 4/4 = 2/4$

The least number is 5.
Sample Response D

3 x 6 = 18/4
18/4 = 6 mugs
Do not add denominators!
Only 1 pound blocks.

Question: How many 4s in 18?
4 x 4 = 16

18/4 - 4/4 = 14/4
14/4 - 4/4 = 10/4
10/4 - 4/4 = 6/4
6/4 - 4/4 = 2/4
About leftover = 2/4
So you will need 5 pounds.

Zela will need 5 pounds. I know this because I subtracted 18/4 by 4/4 and so on. After that 2/4 were left and without the 2/4 will be 4 pounds. But Zela needs that 2/4 so she will actually need 5 pounds.

Sample Response E

wants to make 6 mugs
clay only comes in 1-pound
least number of blocks of clay zela will need

18/4
4 5

Zela will need 5 pounds to make 6 mugs because I wrote 3/4 6 times and added all the numerators and got 18 and multiplied 4 x 4 = 16 and got 5 and 4 then I knew it was 5.

Sample Response F

4 mugs
| Sample Response G | \[
\frac{3}{4} + \frac{3}{4} + \frac{3}{4} + \frac{3}{4} + \frac{3}{4} + \frac{3}{4} = 4 = 1 \\
18/4 ÷ 4 = 14/4 ÷ 4 = 10/4 ÷ 4 = 6/4 ÷ 4 = 2/4
\]
Zela will need at least 5 pound for 6 mugs. She will need 5 pounds because Zela will need an extra half pound to make 6 mugs.

| Sample Response H | 1 clay block = 1.25 mugs  
1.25 + 1.25 + 1.25 + 1.25 + 1.25 = 6.25  
It will take Zela 5 blocks of clay to make 6 mugs. I figured out my answer by knowing that there will be 1/4 left from each clay block.

| Sample Response I | \[
\frac{3}{4} + \frac{3}{4} = 1 \frac{1}{2}  \\
\frac{3}{4} + \frac{3}{4} = 1 \frac{1}{2}  \\
\frac{3}{4} + \frac{3}{4} = 1 \frac{1}{2}  \\
1 \frac{1}{2} + 1 \frac{1}{2} = 3  \\
3 + 1 \frac{1}{2} = 4 \frac{1}{2}  \\
4 \frac{1}{2} + 1/2 = 5 (extra 1/2 is to make a whole pound)  \\
The least number of blocks of clay Zela could get is 5.
\]