

Division Strategies (page 1 of 2)

In Grade 5, you are learning how to solve division problems efficiently.

Here is an example of a division problem.

Janet has 1,780 marbles. She wants to put them into bags, each of which holds 32 marbles. How many full bags of marbles will she have?

Samantha solved this problem by multiplying groups of 32 to reach 1,780.

Samantha's solution

$$30 \times 32 = 960 \quad \text{There are 960 marbles in 30 bags of 32.}$$

$$20 \times 32 = 640 \quad \text{There are 640 marbles in 20 bags of 32.}$$

$$\begin{array}{r} 5 \\ \hline \end{array} \times 32 = \begin{array}{r} 160 \\ \hline \end{array} \quad \text{There are 160 marbles in 5 bags of 32.}$$

$$\mathbf{55} \quad 1,760 \quad \text{There are 1,760 marbles in 55 bags of 32.}$$

1,760 is as close as I can get to 1,780 with groups of 32.

$$1,780 \div 32 = 55 \text{ R}20$$

Janet can fill 55 bags, and she will have 20 extra marbles.

Talisha solved this problem by subtracting groups of 32 from 1,780.

Talisha's solution

32	1,780	
	-640	
	1,140	
	-640	
	500	
	-320	
	180	
	-160	
	20	

20 bags
20 bags
10 bags
5 bags

55 bags

20 extra marbles

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Here is another division example.

$$54 \overline{) 2,500}$$

Hana solved this problem by subtracting groups of 54 from 2,500.

Hana's solution

$$\begin{array}{r}
 54 \overline{) 2,500} \\
 \underline{- 1,080} \quad (20) \\
 1,420 \\
 \underline{- 1,080} \quad (20) \\
 340 \\
 \underline{- 216} \quad (4) \\
 124 \\
 \underline{- 108} \quad (2) \\
 16 \quad \mathbf{46 \ R16}
 \end{array}$$

Walter solved this problem by multiplying groups of 54 to reach 2,500.

Walter's solution

$$\begin{array}{r}
 10 \times 54 = 540 \\
 20 \times 54 = 1,080 \\
 \textcircled{40} \times 54 = 2,160 \rightarrow 2,160 \\
 \textcircled{4} \times 54 = 216 \rightarrow 216 \\
 \textcircled{1} \times 54 = 54 \rightarrow 54 \\
 \textcircled{1} \times 54 = 54 \rightarrow 54 \\
 \hline
 2,484
 \end{array}$$

$$2,500 \div 54 = \mathbf{46 \ R16}$$



How would you solve this problem? $54 \overline{) 2,500}$