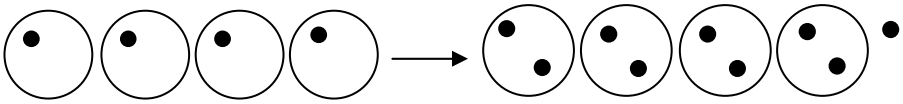
NS5-38: Remainders

Guy wants to share 9 apples with 3 friends.
He sets out 4 plates, one for himself and one for each of his friends.
He puts one apple at a time on a plate:



There is one apple left over.

9 apples cannot be shared equally into 4 sets. Each person gets 2 apples, but one is left over.

9 ÷ 4 = 2 Remainder 1 OR 9 ÷ 4 = 2 R 1

---

1. Can you share 7 apples equally onto 2 plates? Show your work using dots and circles:

2. Share the dots as equally as possible among the circles.

   a) 8 dots in 3 circles

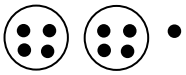
   ____ dots in each circle; ____ dots remaining

   b) 13 dots in 4 circles

   ____ dots in each circle; ____ dot remaining

3. Share the dots as equally as possible. Draw a picture and write a division statement.

   Example: 9 dots in 2 circles

   9 ÷ 2 = 4 R1

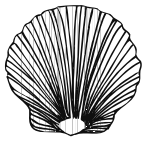
   a) 14 dots in 4 circles

   b) 18 dots in 6 circles

   c) 17 dots in 4 circles

   d) 22 dots in 3 circles

4. Five children want to share 22 sea shells.
   How many shells will each child receive?
   How many will be left over?

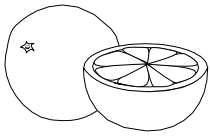


5. Find two different ways to share 29 pens into equal groups so that one is left over.

6. Four friends have more than 7 stickers and less than 13 stickers.
   They share the stickers evenly. How many stickers do they have?
   (Is there more than one answer?)

NS5-40: Long Division — 2-Digit by 1-Digit

Manuel is preparing snacks for 4 classes.
He needs to divide 97 oranges into 4 groups.
He will use long division and a model to solve the problem:



Step 1:

$4 \overline{)\,97}$ ← *He writes the number of oranges here.*

He writes the number of groups he needs to make here.

He puts 2 tens blocks in each group.

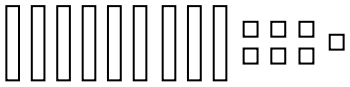
$$\begin{array}{r} 2\,\square \\ 4\overline{)\,9\;7} \end{array}$$

There are 7 ones.

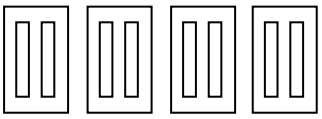
There are 9 tens blocks in the model.

Manuel makes a base ten model of the problem:

97 = 9 tens + 7 ones



Manuel can divide 8 of the 9 tens blocks into 4 equal groups of size 2:



1. Manuel has written a division statement to solve a problem.
   How many groups does he want to make?
   How many tens and how many ones would he need to model the problem?

a) $3 \overline{)\,76}$
groups _____
tens blocks _____
ones _____

b) $4 \overline{)\,95}$
groups _____
tens blocks _____
ones _____

c) $4 \overline{)\,92}$
groups _____
tens blocks _____
ones _____

d) $5 \overline{)\,86}$
groups _____
tens blocks _____
ones _____

2. How many tens blocks can be put in each group?

a) $\begin{array}{r} 1\,\square \\ 3\overline{)\,4\;5} \end{array}$

b) $\begin{array}{r} \square\,\square \\ 5\overline{)\,9\;3} \end{array}$

c) $\begin{array}{r} \square\,\square \\ 4\overline{)\,6\;2} \end{array}$

d) $\begin{array}{r} \square\,\square \\ 3\overline{)\,8\;9} \end{array}$

e) $\begin{array}{r} \square\,\square \\ 4\overline{)\,8\;2} \end{array}$

f) $\begin{array}{r} \square\,\square \\ 3\overline{)\,3\;8} \end{array}$

g) $\begin{array}{r} \square\,\square \\ 5\overline{)\,9\;7} \end{array}$

h) $\begin{array}{r} \square\,\square \\ 4\overline{)\,8\;1} \end{array}$

i) $\begin{array}{r} \square\,\square \\ 6\overline{)\,8\;5} \end{array}$

j) $\begin{array}{r} \square\,\square \\ 7\overline{)\,9\;6} \end{array}$

3. For each division statement, how many groups have been made?
   How many tens are in each group?

a) $\begin{array}{r} 2\,\square \\ 3\overline{)\,8\;5} \end{array}$
groups 3
number of tens in each group 2

b) $\begin{array}{r} \square\,\square \\ 4\overline{)\,9\;4} \end{array}$
groups _____
number of tens in each group _____

c) $\begin{array}{r} \square\,\square \\ 5\overline{)\,7\;5} \end{array}$
groups _____
number of tens in each group _____

d) $\begin{array}{r} \square\,\square \\ 2\overline{)\,8\;9} \end{array}$
groups _____
number of tens in each group _____

NS5-40: Long Division — 2-Digit by 1-Digit *(continued)*

f) $5\overline{)81}$ g) $4\overline{)84}$ h) $5\overline{)96}$ i) $6\overline{)89}$ j) $9\overline{)97}$

k) $4\overline{)93}$ l) $8\overline{)97}$ m) $6\overline{)86}$ n) $7\overline{)95}$ o) $2\overline{)80}$

10. Avi put 98 flowers in bouquets of 8.
How many flowers are left over?

11. How many weeks are in 93 days?

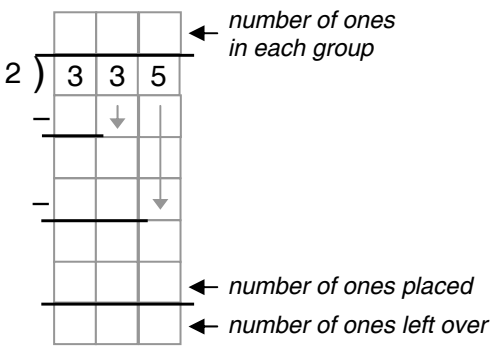
12. Michelle jogs for 3 km everyday.
How many days will she take to run 45 km?

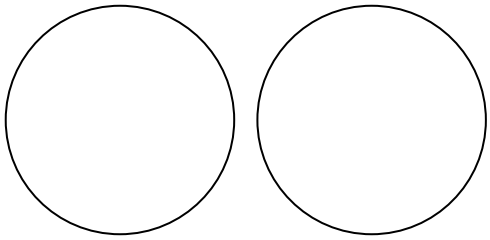
13. A six sided pool has perimeter 72 m.
How long is each side?

14. Guerdy packs 85 books into boxes of 6, and Tyree packs 67 books into boxes of 4.
Who uses more boxes?

NS5-41: Long Division – 3- and 4-Digit by 1-Digit *(continued)*

Steps 6 and 7: *Divide the ones into 2 equal groups.*





2. Divide:

a) 2) 5 3 2

b) 5) 6 4 8

c) 4) 7 2 6

d) 3) 7 4 2

e) 5) 7 5 0

f) 3) 6 3 7

g) 7) 8 2 5

h) 8) 9 2 3

i) 4) 6 8 2

j) 6) 8 2 5

k) 9) 9 1 5

l) 8) 8 3 2

NS5-42: Topics in Division (Advanced)

Answer the following questions in your notebook.

1. A class paid $20 for a cake and $4 per child for a slice of pizza.

   They paid $140.

   How many children are in the class?

2. Make as many 3-digit numbers as you can using the digits 5, 1, and 0. (Use each digit once).

   Which of your numbers are divisible by…

   a) 2 b) 5

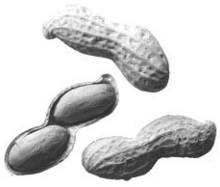
   c) 10 d) 3

3. A number has…

   - remainder 2 when divided by 3
   - remainder 4 when divided by 5

   What is the number?

4. Raj wants to divide 24 apricots, 64 raisins, and 56 peanuts evenly into packets (with no food left over).



   What is the greatest number of packets he can make?
   Explain.

In questions below, you will have to interpret what the remainder means.

Example: Cindy wants to put 64 cookies onto trays. Each tray holds 5 cookies.

How many trays will she need?

64 ÷ 5 = 12 remainder 4

She will need 13 trays (because she needs a tray for the four leftover cookies).

5. A car can hold 5 passengers.

   How many cars will 29 passengers need?

6. Manu colours 4 pictures in her picture book every day.

   How many days will she take to colour 50 pictures?

7. Jay shares 76 plums as evenly as possible among 9 friends.

   How many plums does each friend get?

8. Siru wants to place her stamps in an album.

   Each page holds 9 stamps.

   How many pages will she need for 95 stamps?