

Lesson 19 – Multiplication & Division – Divide by 10

NC Objective:

Solve problems involving multiplication and division, using materials, arrays, repeated addition, mental methods and multiplication and division facts, including problems in contexts

Resources needed:
Differentiated Sheets
Teaching Slides

Vocabulary:
Divide, grouping, sharing, equal groups, multiples, pattern

Children should already be able to multiply by 10 and recognise multiples of 10. They will need to use both grouping and sharing to divide by 10 depending on the context of the problem. Children start to see that grouping and counting in 10s is more efficient than sharing into 10 equal groups.

Key Questions:

What can we use to represent the problem? How does knowing your 10 times table help you to divide by 10? Circle all the multiples of 10 on a hundred square. What do you notice? Can you explain the pattern? How many groups of 10 are there in _____?

★ Working Towards

★★ Working Within

★★★ Greater Depth

Answer the division calculations below.

10 Lemons can be sold in bags of 10. There are 40 lemons. How many bags can be made below?

10 Lemons can be sold in bags of 10. There are 20 lemons. How many bags can be made below?

10 When 20 lemons are sold in bags of 10, _____ bags of lemons can be made. Show this in a bar model.

10 When 50 lemons are sold in bags of 10, _____ bags of lemons can be made. Show this in a bar model.

10 You have 50p in your pocket in 10p coins. How many coins do you have? Circle the correct amount.

10 You have 10p in your pocket in 10p coins. How many coins do you have? Circle the correct amount.

20 = 10 =

40 = 10 =

50 = 10 =

70 = 10 =

Answer the division calculations below.

10 Lemons can be sold in bags of 10. How many bags can be made below?

10 Lemons can be sold in bags of 10. How many bags can be made below?

10 When 40 lemons are sold in bags of 10, _____ bags of lemons can be made. Show this in a bar model.

10 When 80 lemons are sold in bags of 10, _____ bags of lemons can be made. Show this in a bar model.

10 You have 10p in your pocket in 10p coins. How many coins do you have? Draw a picture to help prove your answer.

10 You have 10p in your pocket in 10p coins. How many coins do you have? Draw a picture to help prove your answer.

80 ÷ 10 =

100 ÷ 10 =

110 ÷ 10 =

30 ÷ 10 =

÷ 10 = 2

÷ 10 = 5

Answer the division calculations below.

10 Shop A sold 80 lemons in bags of 10. Shop B sells 100 lemons in bags of 10. I buy all of the bags from both shops. How many bags do I have?

10 Shop A sells 120 lemons in bags of 10. Shop B sells 40 lemons in bags of 10. I buy all of the bags from both shops. How many bags do I have?

10 Leonie has 40p in her pocket in 10p coins. Malachi has 50p in his pocket in 10p coins. Tia has 3 coins in her pocket. How many coins do they have altogether? Draw a picture to help prove your answer.

10 Leonie has 40p in her pocket in 10p coins. Malachi has 10p in his pocket in 10p coins. Tia has 8 coins in her pocket. Who has the most coins? Draw a picture to help prove your answer.

10 eight tens divided by 1 ten equals _____ tens divided by 1 ten equals one hundred and ten

10 twelve tens divided by 1 ten equals _____ tens divided by 1 ten equals four tens

_____ tens divided by 1 ten equals one hundred and ten

_____ tens divided by 1 ten equals seventy

Children will need to use both grouping and sharing to divide by 10 and will start to see that grouping and counting in 10s is more efficient than sharing into 10 equal groups. Children on this sheet have visuals grouped for them and have more visuals. They have simple division calculations.

Children will need to use both grouping and sharing to divide by 10 and will start to see that grouping and counting in 10s is more efficient than sharing into 10 equal groups. Children on this sheet draw their own groups and images. They have division calculations with missing numbers.

Children on this sheet are efficient in dividing by 10. They have complex word problems and calculations to solve.

Reasoning & Problem Solving

Divide by 10 Reasoning & Problem Solving 2

Mrs. Owen has some sweets. She shares them equally between 10 tables.

Could she have 15 sweets?

Could she have 20 sweets?

Explain your answer.

True or False?

Dividing by 10 is the same as dividing by 5 then dividing by 2.

20 ÷ 10 = _____ 20 ÷ 5 = _____

_____ ÷ 2 = _____

Divide by 10 Reasoning & Problem Solving 2

Mrs. Owen has some sweets. She shares them equally between 10 tables.

How many sweets could she have had? How many sweets would be on each table?

Find as many ways as you can. What do you notice about your answers?

True or False?

Dividing by 10 is the same as dividing by 5, then dividing by 2.

Divide by 10 Reasoning & Problem Solving 2

Mrs. Owen has some sweets. She shares them equally between 10 tables. How many sweets could each table have? Find as many ways as you can. What do you notice about your answers?

True or False? Provide examples.

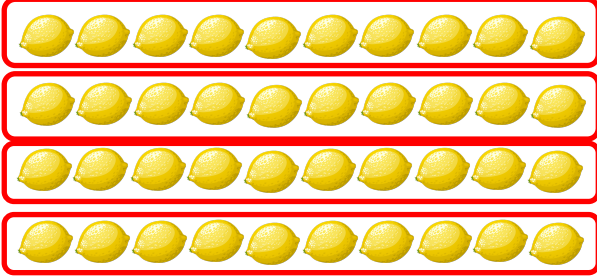
Dividing by 10 is the same as dividing by 8, then dividing by 2.

Dividing by 10 is the same as dividing by 5, then dividing by 2.

Dividing by 10 is the same as dividing by 2, then dividing by 5.

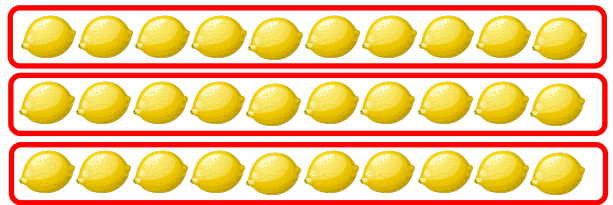
Answer the division calculations below.

- ① Lemons can be sold in bags of 10.
There are 40 lemons.
How many bags can be made below?



$$\square \div \square = \square$$

- ② Lemons can be sold in bags of 10.
There are 30 lemons.
How many bags can be made below?

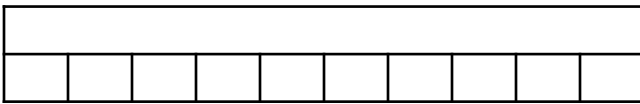


$$\square \div \square = \square$$

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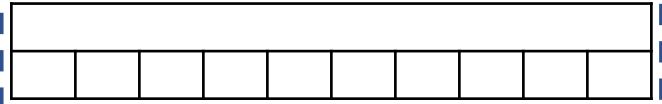
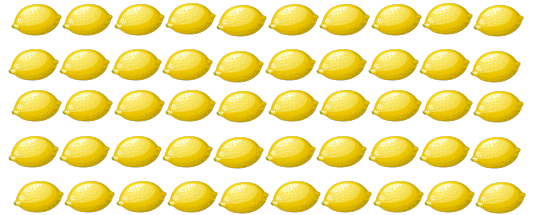
- ③ When 20 lemons are sold in bags of 10,
_____ bags of lemons can be made.

Show this in a bar model.



- ④ When 50 lemons are sold in bags of 10,
_____ bags of lemons can be made.

Show this in a bar model.



- ⑤ You have 50p in your pocket in 10p coins.
How many coins do you have?
Circle the correct amount.



- ⑥ You have 10p in your pocket in 10p coins.
How many coins do you have?
Circle the correct amount.



⑦ $20 \div 10 = \square$

$90 \div 10 = \square$

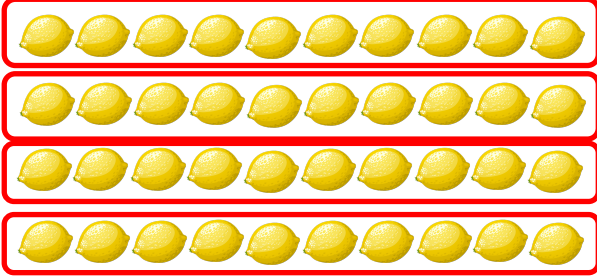
⑧ $50 \div 10 = \square$

$70 \div 10 = \square$



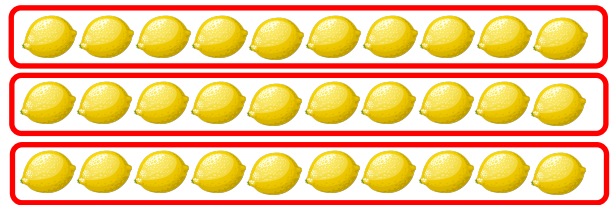
Answer the division calculations below.

- ① Lemons can be sold in bags of 10.
There are 40 lemons.
How many bags can be made below?



$$\boxed{40} \div \boxed{10} = \boxed{4}$$

- ② Lemons can be sold in bags of 10.
There are 30 lemons.
How many bags can be made below?

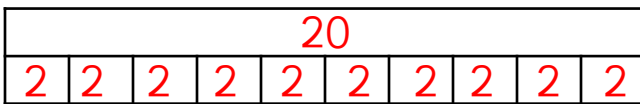
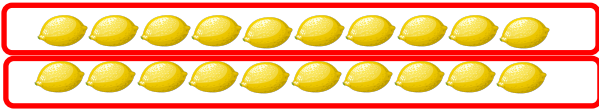


$$\boxed{30} \div \boxed{10} = \boxed{3}$$

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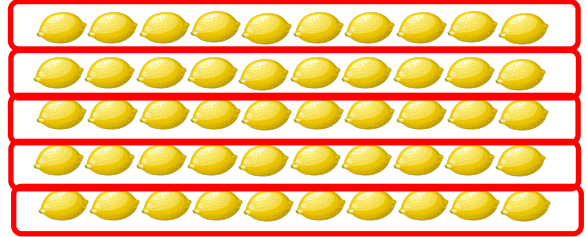
- ③ When 20 lemons are sold in bags of 10,
2 bags of lemons can be made.

Show this in a bar model.



- ④ When 50 lemons are sold in bags of 10,
5 bags of lemons can be made.

Show this in a bar model.



- ⑤ You have 50p in your pocket in 10p coins.
How many coins do you have? **5**
Circle the correct amount.



- ⑥ You have 10p in your pocket in 10p coins.
How many coins do you have? **1**
Circle the correct amount.



$$\boxed{20} \div \boxed{10} = \boxed{2}$$

$$\boxed{90} \div \boxed{10} = \boxed{9}$$

$$\boxed{50} \div \boxed{10} = \boxed{5}$$

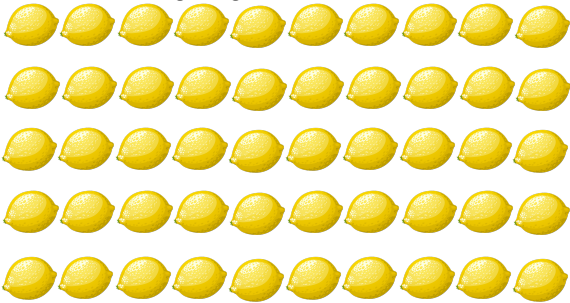
$$\boxed{70} \div \boxed{10} = \boxed{7}$$



Answer the division calculations below.

1

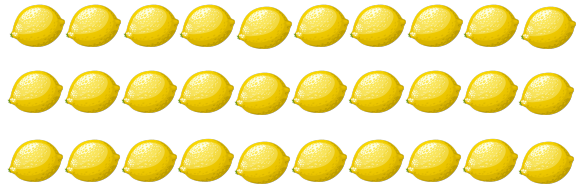
Lemons can be sold in bags of 10.
How many bags can be made below?



$$\square \div \square = \square$$

2

Lemons can be sold in bags of 10.
How many bags can be made below?

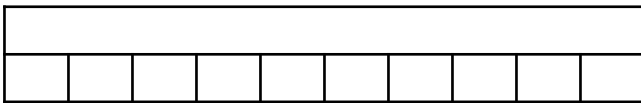


$$\square \div \square = \square$$

3

When 40 lemons are sold in bags of 10, _____
bags of lemons can be made.

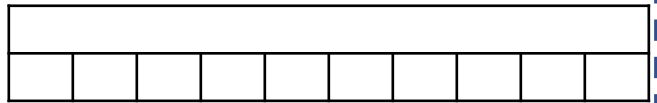
Show this in a bar model.



4

When 80 lemons are sold in bags of 10, _____
bags of lemons can be made.

Show this in a bar model.



5

You have 90p in your pocket in 10p coins.
How many coins do you have?

Draw a picture to help prove your answer.

6

You have 10p in your pocket in 10p coins.
How many coins do you have?

Draw a picture to help prove your answer.

7

$$80 \div 10 = \square$$

$$100 \div 10 = \square$$

$$\square \div 10 = 2$$

8

$$110 \div 10 = \square$$

$$30 \div 10 = \square$$

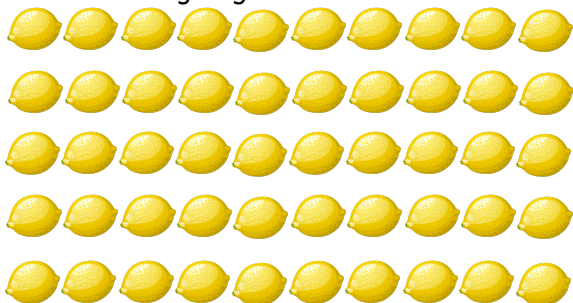
$$\square \div 10 = 5$$



Answer the division calculations below.

①

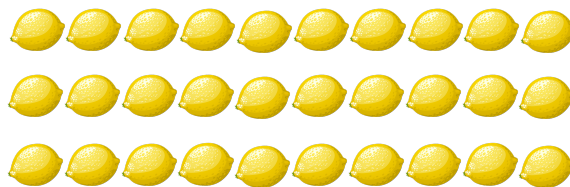
Lemons can be sold in bags of 10.
How many bags can be made below?



$$50 \div 10 = 5$$

②

Lemons can be sold in bags of 10.
How many bags can be made below?

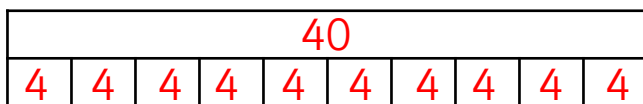


$$30 \div 10 = 3$$

③

When 40 lemons are sold in bags of 10, 4
bags of lemons can be made.

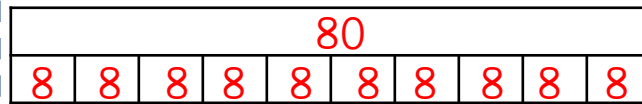
Show this in a bar model.



④

When 80 lemons are sold in bags of 10, 8
bags of lemons can be made.

Show this in a bar model.



⑤

You have 90p in your pocket in 10p coins.
How many coins do you have?

Draw a picture to help prove your answer.



⑥

You have 10p in your pocket in 10p coins.
How many coins do you have?

Draw a picture to help prove your answer.



⑦

$$80 \div 10 = 8$$

$$100 \div 10 = 10$$

$$20 \div 10 = 2$$

⑧

$$110 \div 10 = 11$$

$$30 \div 10 = 3$$

$$50 \div 10 = 5$$



Answer the division calculations below.

①

Shop A sells 80 lemons in bags of 10.

Shop B sells 100 lemons in bags of 10.

I buy all of the bags from both shops.

How many bags do I have?

A



B



②

Shop A sells 120 lemons in bags of 10.

Shop B sells 40 lemons in bags of 10.

I buy all of the bags from both shops.

How many bags do I have?

A



B



③

Leanna has 90p in her pocket in 10p coins.

Malachi has 50p in his pocket in 10p coins.

Tia has 3 coins in her pocket.

How many coins do they have altogether?



Draw a picture to help prove your answer.

④

Leanna has 40p in her pocket in 10p coins.

Malachi has 110p in his pocket in 10p coins.

Tia has 8 coins in her pocket.

Who has the most coins?



Draw a picture to help prove your answer.

⑤

eight tens divided by 1 ten equals

_____ tens divided by 1 ten equals
one hundred and ten

_____ tens divided by 1 ten equals
one hundred and ten

⑥

twelve tens divided by 1 ten equals

_____ tens divided by 1 ten equals
four tens

_____ tens divided by 1 ten
equals seventy



Answer the division calculations below.

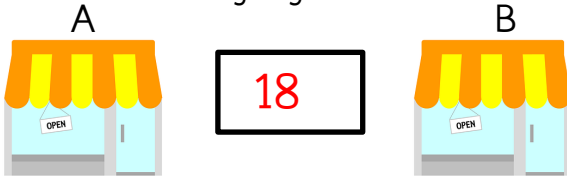
①

Shop A sells 80 lemons in bags of 10. **8**

Shop B sells 100 lemons in bags of 10. **10**

I buy all of the bags from both shops.

How many bags do I have?



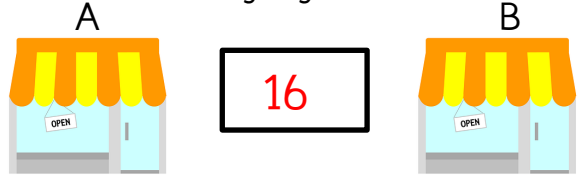
②

Shop A sells 120 lemons in bags of 10. **12**

Shop B sells 40 lemons in bags of 10. **4**

I buy all of the bags from both shops.

How many bags do I have?



③

Leanna has 90p in her pocket in 10p coins. **9 coins**

Malachi has 50p in his pocket in 10p coins. **5 coins**

Tia has 3 coins in her pocket.

How many coins do they have altogether?

17

Draw a picture to help prove your answer.

④

Leanna has 40p in her pocket in 10p coins. **4 coins**

Malachi has 110p in his pocket in 10p coins. **11 coins**

Tia has 8 coins in her pocket.

Who has the most coins?

Malachi

Draw a picture to help prove your answer.

⑤

eight tens divided by 1 ten equals **eight**

eleven tens divided by 1 ten equals
one hundred and ten

nine tens divided by 1 ten equals
nine ones

⑥

twelve tens divided by 1 ten equals **twelve**

four tens divided by 1 ten equals
four ones

seven tens divided by 1 ten
equals seventy



Mrs. Owen has some sweets.

She shares them equally between 10 tables.

Could she have 15 sweets?

Could she have 20 sweets?

Explain your answer.

True or False?

Dividing by 10 is the same as dividing by 5 then dividing by 2.

$20 \div 10 = \underline{\quad}$

$20 \div 5 = \underline{\quad}$

$\underline{\quad} \div 2 = \underline{\quad}$



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$20 \div 10 = \underline{\quad}$

$20 \div 5 = \underline{\quad}$

$\underline{\quad} \div 2 = \underline{\quad}$

**Answers**

Mrs. Owen has some sweets.

She shares them equally between 10 tables.

Could she have 15 sweets? **No**

Could she have 20 sweets? **No**

Explain your answer.

She has to have a number that is a multiple of 10 because she shares them equally between 10 tables.

True or False?

Dividing by 10 is the same as dividing by 5 then dividing by 2.

$$20 \div 10 = \underline{2}$$

$$20 \div 5 = \underline{4}$$

True.

$$\underline{4} \div 2 = \underline{2}$$

**Answers**

Mrs. Owen has some sweets.

She shares them equally between 10 tables.

Could she have 15 sweets? **No**

Could she have 20 sweets? **No**

Explain your answer.

She has to have a number that is a multiple of 10 because she shares them equally between 10 tables.

True or False?

Dividing by 10 is the same as dividing by 5 then dividing by 2.

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$$20 \div 5 = \underline{4}$$

True.

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**Answers**

Mrs. Owen has some sweets.

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Could she have 15 sweets? **No**

Could she have 20 sweets? **No**

Explain your answer.

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True or False?

Dividing by 10 is the same as dividing by 5 then dividing by 2.

$$20 \div 10 = \underline{2}$$

$$20 \div 5 = \underline{4}$$

True.

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**Answers**

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Explain your answer.

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True or False?

Dividing by 10 is the same as dividing by 5 then dividing by 2.

$$20 \div 10 = \underline{2}$$

$$20 \div 5 = \underline{4}$$

True.

$$\underline{4} \div 2 = \underline{2}$$



Mrs. Owen has some sweets.

She shares them equally between 10 tables.

How many sweets could she have had?
How many sweets would be on each table?

Find as many ways as you can.
What do you notice about your answers?

True or False?

Dividing by 10 is the same as dividing by 5,
then dividing by 2.



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Dividing by 10 is the same as dividing by 5,
then dividing by 2.



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She shares them equally between 10 tables.

How many sweets could she have had?

How many sweets would be on each table?

Find as many ways as you can.

What do you notice about your answers?

She could have:

30 sweets, there would be 3 on each table.

$$30 \div 10 = 3$$

Continues with calculations such as:

$$40 \div 10 = 4, 50 \div 10 = 5,$$

$$60 \div 10 = 6, 70 \div 10 = 7$$

True or False?

Dividing by 10 is the same as dividing by 5,
then dividing by 2.

True.



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She shares them equally between 10 tables.

How many sweets could she have had?

How many sweets would be on each table?

Find as many ways as you can.

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True or False?

Dividing by 10 is the same as dividing by 5,
then dividing by 2.

True.



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True.



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$$40 \div 10 = 4, 50 \div 10 = 5,$$

$$60 \div 10 = 6, 70 \div 10 = 7$$

True or False?

Dividing by 10 is the same as dividing by 5,
then dividing by 2.

True.



Mrs. Owen has some sweets.

She shares them equally between 10 tables.
How many sweets could each table have?

Find as many ways as you can.
What do you notice about your answers?

True or False? Provide examples.

Dividing by 10 is the same as dividing by 8,
then dividing by 2.

Dividing by 10 is the same as dividing by 5,
then dividing by 2.

Dividing by 10 is the same as dividing by 2,
then dividing by 5.



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She shares them equally between 10 tables.
How many sweets could each table have?

Find as many ways as you can.
What do you notice about your answers?

True or False? Provide examples.

Dividing by 10 is the same as dividing by 8,
then dividing by 2.

Dividing by 10 is the same as dividing by 5,
then dividing by 2.

Dividing by 10 is the same as dividing by 5,
then dividing by 2.



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How many sweets could each table have?

Find as many ways as you can.
What do you notice about your answers?

True or False? Provide examples.

Dividing by 10 is the same as dividing by 8,
then dividing by 2.

Dividing by 10 is the same as dividing by 5,
then dividing by 2.

Dividing by 10 is the same as dividing by 2,
then dividing by 5.



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She shares them equally between 10 tables.
How many sweets could each table have?

Find as many ways as you can.
What do you notice about your answers?

True or False? Provide examples.

Dividing by 10 is the same as dividing by 8,
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Dividing by 10 is the same as dividing by 5,
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Dividing by 10 is the same as dividing by 5,
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How many sweets could each table have?
Find as many ways as you can.

What do you notice about your answers?

True or False? Provide examples.

Dividing by 10 is the same as dividing by 8,
then dividing by 2.

Dividing by 10 is the same as dividing by 5,
then dividing by 2.

Dividing by 10 is the same as dividing by 5,
then dividing by 2.



Answers

She could have:
30 sweets, there would be 3 on each table.

$$30 \div 10 = 3$$

Continues with calculations such as:

$$40 \div 10 = 4, 50 \div 10 = 5,$$

$$60 \div 10 = 6, 70 \div 10 = 7$$

The tens digit is the same as the answer.

False:

$$40 \div 10 = 4$$

$$40 \div 8 = 5$$

$$5 \div 2 = 2 \text{ and } 1 \text{ left over } (2 \frac{1}{2})$$

True:

$$40 \div 10 = 4$$

$$40 \div 5 = 8$$

$$8 \div 2 = 4$$

True:

$$40 \div 10 = 4$$

$$40 \div 2 = 20$$

$$20 \div 5 = 4$$



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How many sweets could each table have?
Find as many ways as you can.

What do you notice about your answers?

True or False? Provide examples.

Dividing by 10 is the same as dividing by 8,
then dividing by 2.

Dividing by 10 is the same as dividing by 5,
then dividing by 2.

Dividing by 10 is the same as dividing by 5,
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Answers

She could have:
30 sweets, there would be 3 on each table.

$$30 \div 10 = 3$$

Continues with calculations such as:

$$40 \div 10 = 4, 50 \div 10 = 5,$$

$$60 \div 10 = 6, 70 \div 10 = 7$$

The tens digit is the same as the answer.

False:

$$40 \div 10 = 4$$

$$40 \div 8 = 5$$

$$5 \div 2 = 2 \text{ and } 1 \text{ left over } (2 \frac{1}{2})$$

True:

$$40 \div 10 = 4$$

$$40 \div 5 = 8$$

$$8 \div 2 = 4$$

True:

$$40 \div 10 = 4$$

$$40 \div 2 = 20$$

$$20 \div 5 = 4$$