Mathematics

STANDARD 5

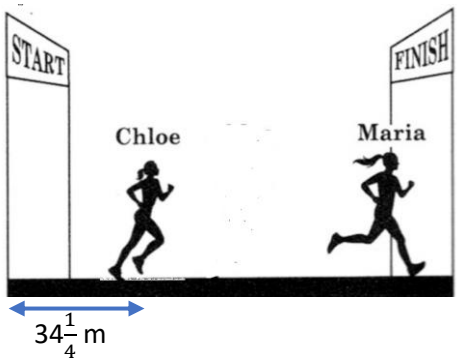
NUMBER: Fractions

WORKSHEET

1. Write $\frac{39}{5}$ as a mixed number.

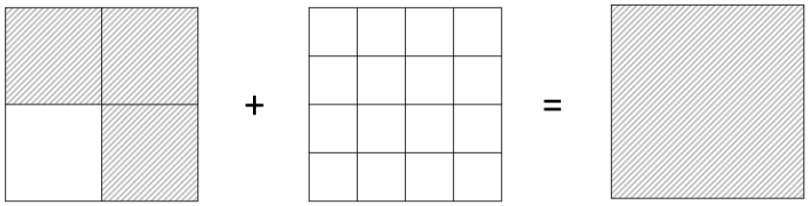
2. $5 - \frac{3}{4} =$

3. The diagram shows Maria and Chloe in a race. Maria is at the finish line and Chloe is $15\frac{3}{4}$ meters behind Maria.



What is the total distance from the start to the finish line?

4. Shade the fraction of the second shape to complete the statement.



5. Gary had $80. He gave his sister $\frac{1}{16}$ of his money then spent $\frac{1}{8}$ of his money on snacks. What fraction of his money was left?

(CPDD)

6. Kesha had 480 oranges.

She sold $\frac{1}{4}$ of them on Saturday and $\frac{2}{3}$ of the remainder on Sunday.

How many oranges did she have remaining after the weekend?

7. Sita has 36 marbles. She has $\frac{3}{7}$ the number that Diana has.
How many marbles do they have altogether?

8. Can two fractions with the same numerators and different denominators be equal? Use words or diagrams to explain your answer. You may use $\frac{1}{4}$ and $\frac{1}{8}$ as examples.

9. Paula has 125 cupcakes of three different flavours. There are 45 strawberry cupcakes and an equal number of vanilla and chocolate cupcakes.

Chocolate **Strawberry** **Vanilla**

What percentage of the cupcakes are vanilla flavoured?

10. Angeni shared a bag of mangoes with her friends. She gave $\frac{1}{5}$ to Jenny and $\frac{1}{3}$ of the remainder to Paul.
(a) What fraction of the mangoes did Paul get?
(b) What fraction of the mangoes did Angeni give her friends?

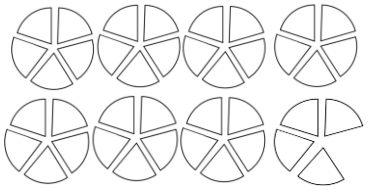
11. Peter spent $\frac{1}{3}$ of his money on a toy car and $\frac{2}{3}$ of the remainder on a toy boat. He had $6 left. How much money did he have at the start?

12. Half of Isiah's money is equal to $\frac{2}{3}$ of Bob's money.
Isiah has $15 more than Bob.
How much money do they have altogether?

13. In a jar filled with beads, $\frac{2}{5}$ are blue and $\frac{1}{3}$ are red. The rest are yellow and green.
The total number of red, green and yellow beads is 126.
There are 3 times as many yellow beads as there are green
How many yellow beads are in the jar?

ANSWERS

1. Method 1



7 wholes and $\frac{4}{5}$

Answer $7\frac{4}{5}$

Method 2

$5\overline{)39}$ 7 remainder 4

Answer $7\frac{4}{5}$

2. Method 1

$5 - \frac{3}{4} = 4 + 1 - \frac{3}{4}$

$= 4 + \frac{4}{4} - \frac{3}{4}$

$= 4 + \frac{1}{4}$

$= 4\frac{1}{4}$

Method 2

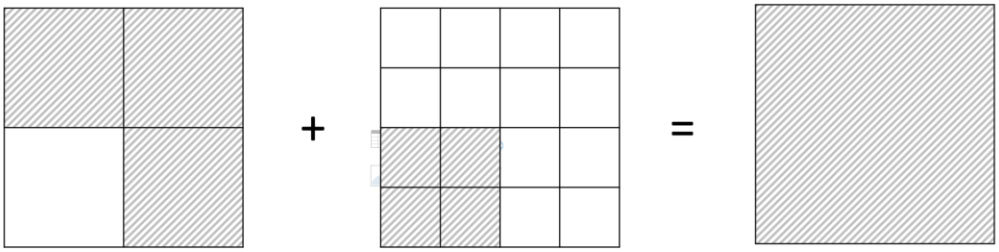
$5 - \frac{3}{4} = \frac{20}{4} - \frac{3}{4}$

$= \frac{17}{4}$

$= 4\frac{1}{4}$

3. Total distance = $15\frac{3}{4} + 34\frac{1}{4} = 50$ m

4.



5. Method 1

Gary's sister = $\frac{1}{16}$

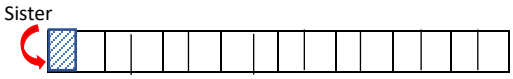
Spent = $\frac{1}{8}$

Fraction used = $\frac{1}{8} + \frac{1}{16} = \frac{2}{16} + \frac{1}{16} = \frac{3}{16}$

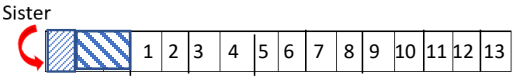
Fraction left = 1 - $\frac{3}{16} = \frac{13}{16}$

Answer: $\frac{13}{16}$

Method 2 Bar Model



Spent $\frac{1}{8} = \frac{2}{16}$



Remained with 13 of the 16 parts

Answer: $\frac{13}{16}$

6. Method 1

Sold on Saturday = $\frac{1}{4}$

Remaining = 1 - $\frac{1}{4} = \frac{3}{4}$

Sold on Sunday = $\frac{2}{3}$ x $\frac{3}{4} = \frac{1}{2}$

Total sales for the weekend = $\frac{1}{4} + \frac{1}{2} = \frac{1}{4} + \frac{2}{4} = \frac{3}{4}$

Remaining = 1 - $\frac{3}{4} = \frac{1}{4}$

Oranges remaining = $\frac{1}{4}$ x 480 = 120

Answer: 120

Method 2

Sold on Saturday = $\frac{1}{4}$x 480 = 120

Remaining = 480 – 120 = 360

Sold on Sunday = $\frac{2}{3}$ x 360 = 240

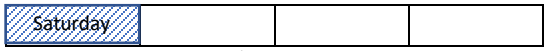
Total sales for the weekend = 120 +240

= 360

Oranges remaining =480- 360=120

Answer: 120

Method 3 Bar Model



Sol d on Sunday : $\frac{1}{3}$ of the remaining. So 1 of the remaining 3 parts was sold on Sunday

Fraction remaining = $\frac{1}{2}$

Number remaining = $\frac{1}{2}$ x 480 = 240 Answer: 240

7. Method 1

Sita had 36 marbles.

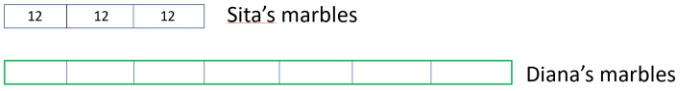
$\frac{3}{7}$ of Diana's marbles = 36

$\frac{1}{7}$ of Diana's marbles = 12

Number of marbles that Diana has = 12 × 7 = 84

Altogether, they have = 84 + 36 = 120

Method 2 Bar Model



If Sita has 36 marbles, then one portion of her bar will be 12 marbles.

Altogether, they have 3 + 7 = 10 such portions.

Number of marbles altogether = 10 × 12 = 120

8. Method 1

The drawings show both $\frac{1}{4}$ and $\frac{1}{8}$.

These two fractions are not equal.

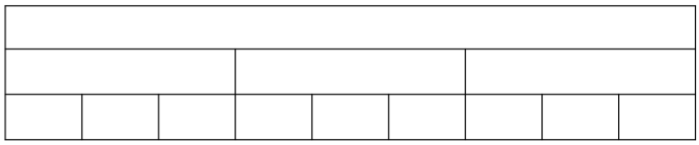
$\frac{1}{4}$ is equivalent to $\frac{2}{8}$.

So $\frac{1}{4}$ cannot be equal to $\frac{1}{8}$.

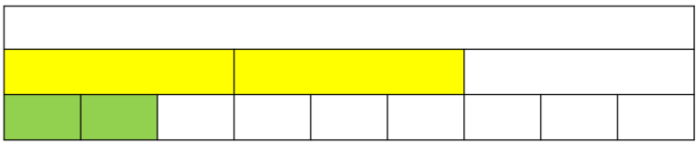
Answer: No

Method 2

The different denominators suggest the whole is divided into different unit fractions.



The same numerator suggests the same number of unit fractions.



Hence, the same numerator and different denominators will always refer to different amounts which represent the same number of different unit fractions.

9. 125 cupcakes

45 strawberry

Number of chocolate and vanilla = 125 – 45 = 80

Equal number of chocolate and vanilla.

Number of vanilla = 80÷2 = 40

Percentage = $\frac{40}{125}$ x 100 = 32%

10. <u>Method 1</u>

(a) Angeni gave $\frac{1}{5}$ to Jenny.

She remained with 1 - $\frac{1}{5} = \frac{4}{5}$.

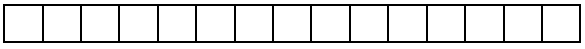
Fraction that Paul got = $\frac{1}{3}$x $\frac{4}{5}$ $\frac{4}{15}$ Answer = $\frac{4}{15}$

(b) Fraction given to her friends = $\frac{1}{5} + \frac{4}{15} = \frac{3}{15} + \frac{4}{15} = \frac{7}{15}$

Answer $\frac{7}{15}$

<u>Method 2 Bar model</u>

Since we are dealing with $\frac{1}{3}$ and $\frac{1}{5}$ we divide the bar into 15 equal pieces.



$\frac{1}{5} = \frac{3}{15}$ was given to Jenny

Out of the remaining 12 pieces, Paul got $\frac{1}{3}$ of them, so Paul got $\frac{1}{3}$ x 12 = 4 pieces

(a) Paul got $\frac{4}{15}$

(b) Fraction given to her friends = $\frac{3}{15} + \frac{4}{15} = \frac{7}{15}$

11. Method 1

Money spent on toy car = $\frac{1}{3}$

Remainder = $1 - \frac{1}{3} = \frac{2}{3}$

Money spent on toy boat = $\frac{2}{3}$ of remainder = $\frac{2}{3} \times \frac{2}{3}$

$= \frac{4}{9}$

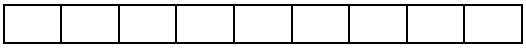
Total spent = $\frac{1}{3} + \frac{4}{9} = \frac{3}{9} + \frac{4}{9} = \frac{7}{9}$

Remaining fraction = $1 - \frac{7}{9} = \frac{2}{9}$ = \$6 $\Longrightarrow$ $\frac{1}{9}$ = \$3

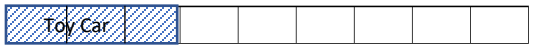
Total spent = $\frac{7}{9} = 7 \times \$3 = \$21$

Method 2 Bar Model

We are dealing with $\frac{1}{3}$ and $\frac{1}{3}$ so we divide the bar into 9 equal pieces.



$\frac{1}{3} = \frac{3}{9}$ was used for the Toy Car



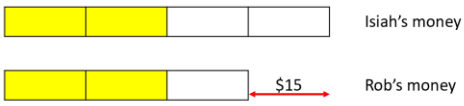
$\frac{2}{3}$ of the remaining 6 pieces is equal to 4 pieces. Four pieces for the toy boat.

That leaves $\frac{2}{9}$ of Peter's money which we know is \$6.

$\frac{1}{9}$ = \$3

Total spent is $\frac{7}{9}$ This equals $7 \times \$3 = \$21$

12. Bar Model



Total number of equal parts = 7

Worth of each part = \$15

Total worth of all the parts = $\$15 \times 7 = \$105$

(CPDD)

13. Method 1

Fraction red and blue = $\frac{2}{5} + \frac{1}{3} = \frac{6}{15} + \frac{5}{15} = \frac{11}{15}$

Fraction yellow and green = 1 - $\frac{11}{15} = \frac{4}{15}$

Fraction red, yellow and green = $\frac{4}{15} + \frac{1}{3} = \frac{4}{15} + \frac{5}{15} = \frac{9}{15}$

Number of red, yellow and green = 126

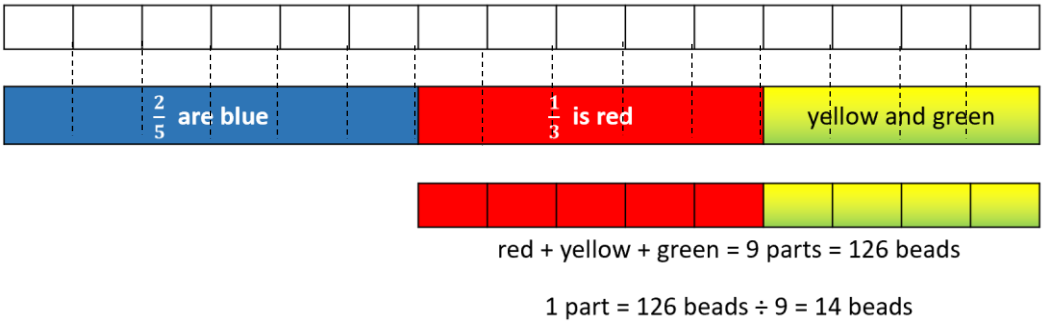
$$\frac{9}{15} = 126 \quad so, \frac{1}{15} = \frac{126}{9} = 14$$

There were 3 times more yellow than green so $\frac{4}{15}$ = $\frac{3}{15}$ yellow and $\frac{1}{15}$ green

Number of yellow = 3 x $\frac{1}{15}$ = 3 x 14 = 42 Answer: 42

Method 2 Bar Model

The number of parts should be divisible by both 3 and 5, so we chose 15.



red + yellow + green = 9 parts = 126 beads

1 part = 126 beads ÷ 9 = 14 beads

Three times as many yellow beads as there are green suggests 3 of the 4 remaining parts are yellow beads.

There are 14 beads × 3 = 42 yellow beads.