

Warm Up Grade 8

January 29, 2016

Unit fraction has numerator 1

Show work and evaluate

a) $\frac{7}{5}$ of 100

5
unit fraction

$$\frac{1}{5} \text{ of } 100 = 20$$

$\times 7$ To get 7 on top multiply by 7 (both sides)

$$\frac{7}{5} \text{ of } 100 = 140$$

b) $\frac{3}{4}$ of 48

$$\frac{1}{4} \text{ of } 48 = 12$$

$\times 3$

$$\frac{3}{4} \text{ of } 48 = 36$$

Mental Math - Lesson 29

Power Builder A

1. $\frac{1}{4}$ of 12 = 3

2. $\frac{1}{5}$ of 35 = 7

3. $\frac{1}{8}$ of 40 = 5

4. $\frac{1}{3}$ of 45 = 15

5. $\frac{1}{7}$ of 28 = 4

6. $\frac{3}{4}$ of 28 = 3×4
= 12

7. $\frac{1}{5}$ of 45 = 9

8. $\frac{2}{5}$ of 45 = 9×2
= 18

9. $\frac{1}{10}$ of 70 = 7

10. $\frac{3}{10}$ of 70 = 3×7
= 21

11. $\frac{4}{5}$ of 20

$\frac{1}{5}$ of 20 = 4

$\frac{4}{5}$ of 20 = $4 \times 4 = 16$

12. $\frac{3}{7}$ of 42

$\frac{1}{7}$ of 42 = 6

$\frac{3}{7}$ of 42 = 6×3
= 18

13. $\frac{3}{4}$ of 100

$\frac{1}{4}$ of 100 = 25

$\frac{3}{4}$ of 100 = 3×25
= 75

14. $\frac{2}{3}$ of 90

$\frac{1}{3}$ of 90 = 30

$\frac{2}{3}$ of 90 = 60

15. $\frac{3}{5}$ of 100

$\frac{1}{5}$ of 100 = 20

$\frac{3}{5}$ of 100 = 20×3
= 60

16. $\frac{5}{8}$ of 40

$\frac{1}{8}$ of 40 = 5

$\frac{5}{8}$ of 40 = $5 \times 5 = 25$

17. $\frac{2}{3}$ of 600

$\frac{1}{3}$ of 600 = 200

$\frac{2}{3}$ of 600 = 2×200
= 400

18. $\frac{3}{4}$ of 200

$\frac{1}{4}$ of 200 = 50

$\frac{3}{4}$ of 200 = 3×50
= 150

19. $\frac{4}{5}$ of 200

$\frac{1}{5}$ of 200 = 40

$\frac{4}{5}$ of 200 = 4×40
= 160

20. $\frac{2}{3}$ of 450

$\frac{1}{3}$ of 450 = 150

$\frac{2}{3}$ of 450 = 2×150
= 300

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

| | | | | | | |
|---|---|---|--|--|--|--|
| 4 | 4 | 4 | | | | |
|---|---|---|--|--|--|--|

$$\frac{3}{5} \text{ of } 100$$

$$\frac{1}{5} \text{ of } 100 = 20$$

$$\frac{3}{5} \text{ of } 100 = 60$$

Lesson 29 Power Builder B

1. $\frac{1}{3}$ of 15 = 5

2. $\frac{1}{5}$ of 25 = 5

3. $\frac{1}{4}$ of 40 = 10

4. $\frac{1}{8}$ of 48 = 6

5. $\frac{1}{7}$ of 35 = 5

6. $\frac{2}{7}$ of 35 = 2×5
= 10

7. $\frac{1}{3}$ of 90 = 30

8. $\frac{2}{3}$ of 90 = 2×30
= 60

9. $\frac{1}{10}$ of 60 = 6

10. $\frac{3}{10}$ of 60 = 3×6
= 18

11. $\frac{3}{4}$ of 20

12. $\frac{2}{7}$ of 28

$\frac{1}{4}$ of 20 = 5

$\frac{1}{7}$ of 28 = 4

so $\frac{3}{4}$ of 20 = 3×5
= 15

$\frac{2}{7}$ of 28 = 2×4
= 8

13. $\frac{4}{5}$ of 100

14. $\frac{3}{4}$ of 80

$\frac{1}{5}$ of 100 = 20

$\frac{1}{4}$ of 80 = 20

$\frac{4}{5}$ of 100 = 4×20
= 80

$\frac{3}{4}$ of 80 = 3×20
= 60

15. $\frac{2}{5}$ of 100

16. $\frac{3}{8}$ of 80

$\frac{1}{5}$ of 100 = 20

$\frac{1}{8}$ of 80 = 10

$\frac{2}{5}$ of 100 = 2×20
= 40

$\frac{3}{8}$ of 80 = 3×10
= 30

17. $\frac{2}{3}$ of 300

18. $\frac{3}{4}$ of 100

$\frac{1}{3}$ of 300 = 100

$\frac{1}{4}$ of 100 = 25

$\frac{2}{3}$ of 300 = 2×100
= 200

$\frac{3}{4}$ of 100 = 3×25
= 75

19. $\frac{4}{5}$ of 500

20. $\frac{2}{3}$ of 900

$\frac{1}{5}$ of 500 = 100
 $\frac{4}{5}$ of 500 = 4×100 = 400

$\frac{1}{3}$ of 900 = 300

$\frac{2}{3}$ of 900 = 2×300
= 600

$$\begin{array}{l} 7 \text{ of } 28 \\ 7 \times 28 \end{array} \Rightarrow \begin{array}{l} \cancel{7} \times 20 = 140 \\ 7 \times 8 = 56 \\ \hline 196 \end{array}$$

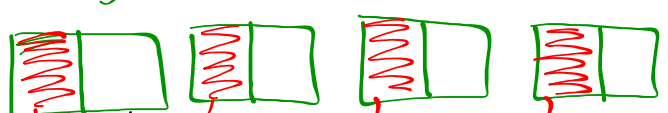
Multiplying Whole Numbers and Fractions


What does $4 \times \frac{1}{2}$ mean?

4 groups of $\frac{1}{2}$, which we can model using rectangles.

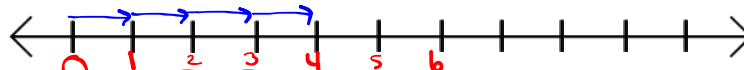
$4 \times \frac{1}{2}$

how many rec. \rightarrow 4 groups of size $\frac{1}{2}$ \leftarrow how many shaded \leftarrow # of pieces in rectangle

= 

= Regroup Shaded  $4 \times \frac{1}{2} = 2$ or $\frac{4}{2} = 2$

You can also use number line
(Count by the unit fraction)



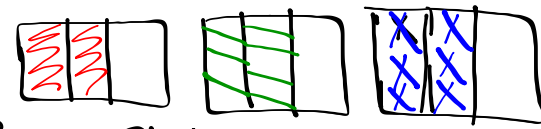
$4 \times \frac{1}{2}$

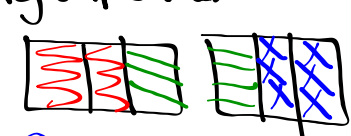
4 arrows of size $\frac{1}{2}$ where it stops is the answer

$4 \times \frac{1}{2} = 2 = \frac{4}{2}$

Try $3 \times \frac{2}{3}$ Model with a) rectangles
b) number lines

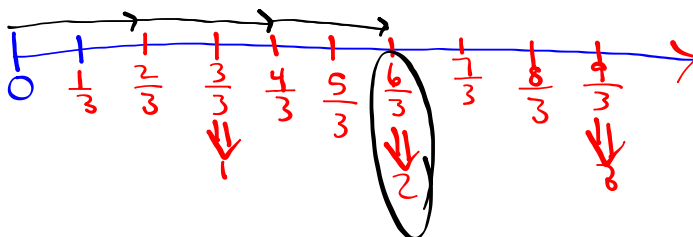
of rec. \rightarrow 3 groups of $\frac{2}{3}$ \leftarrow shaded \leftarrow # of pieces in Rectangle

= 

= Regroup Shaded 

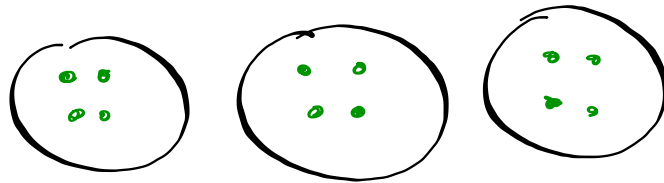
= 2

b) $3 \times \frac{2}{3} = 2 = \frac{6}{3}$
3 arrows of size $\frac{2}{3}$



$$3 \times 4 = 4 \times 3$$

3 groups of size 4

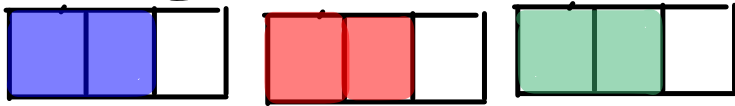


$$4 + 4 + 4$$

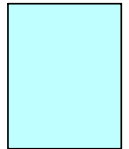
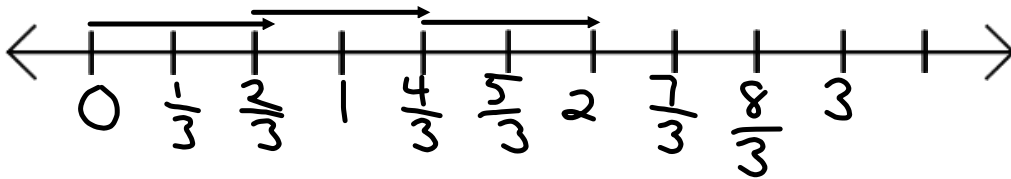
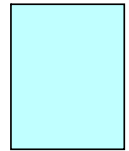
$$3 \times 7$$

$$7 + 7 + 7$$

$$3 \times \frac{2}{3}$$



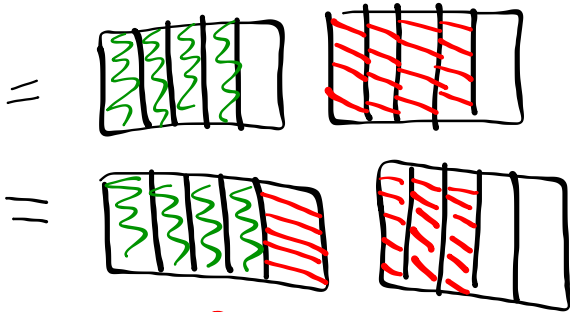
$$3 \times \frac{2}{3} = 2.$$



Try $2 \times \frac{4}{5}$
5

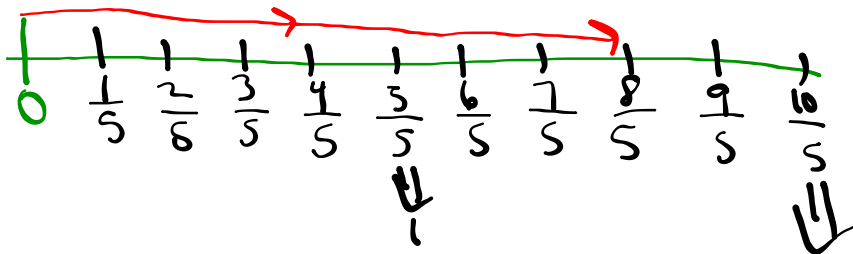
- a) Rectangle
- b) # line

a) 2 groups of $\frac{4}{5}$



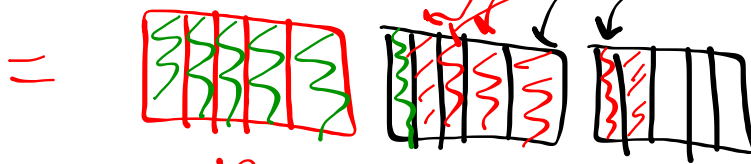
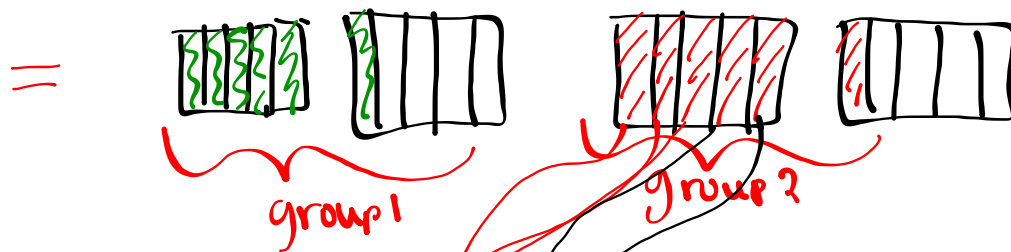
$\frac{8}{5}$ or $1\frac{3}{5}$

$2 \times \frac{4}{5} = \frac{8}{5} = 1\frac{3}{5}$
arrow length $\frac{4}{5}$

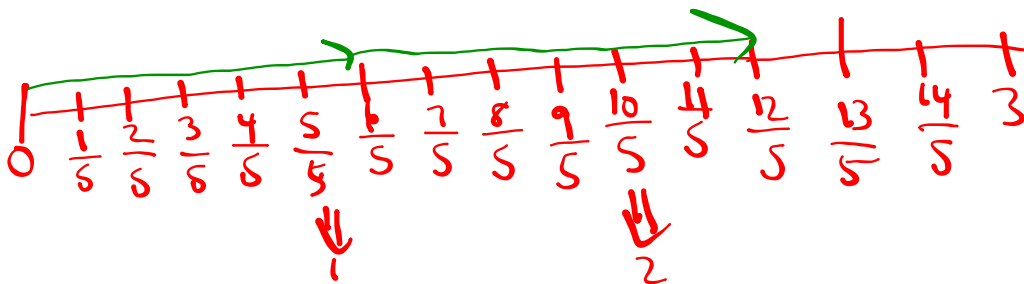


$$2 \times \frac{6\frac{1}{5}}{5}$$

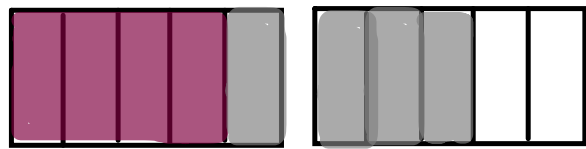
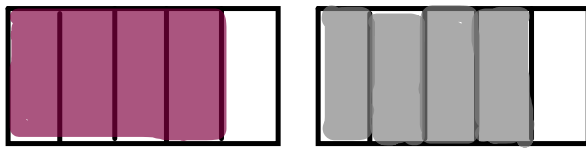
\uparrow
Improper



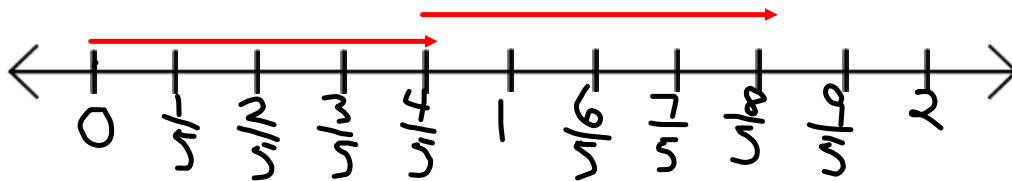
$$\frac{12}{5} \text{ or } 2\frac{2}{5}$$



$$2 \times \frac{4}{5}$$



$$2 \times \frac{4}{5} = \frac{8}{5}$$



When it ask the following...

"Write each statement as multiplication statements in two ways."

$$\frac{5}{9} \text{ of } 45$$

First way

$$\frac{5}{9} \times 45$$

Second way

$$45 \times \frac{5}{9}$$

$$\frac{1}{9} \text{ of } 45 = 5$$

$$\frac{5}{9} \text{ of } 45 = 5 \times 5 = 25$$

$$\frac{1}{7} \text{ of } 3$$

$$3 \times \frac{1}{7} \text{ or } \frac{1}{7} \times 3$$

X Repeated addition

X 3 groups of $\frac{1}{7}$

$$\frac{1}{7} + \frac{1}{7} + \frac{1}{7} = \frac{3}{7}$$

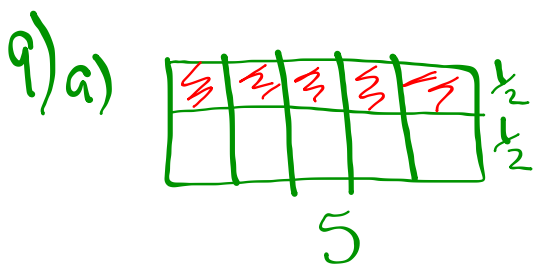
Homework pg. 108

use fraction rectangles since they are easier to draw

6, #7, #8a, #9(a,b), #10(a,b), #11(a,b,c)
#14(a,c), #15(a,c), #16(a,c,f), #17

↓
model

↓
don't model
just answer



Area of shaded = Base \times Height
 $= 5 \times \frac{1}{2}$