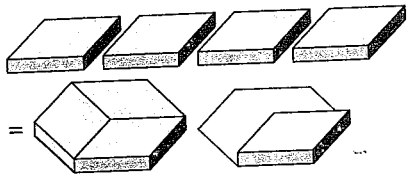
Practise

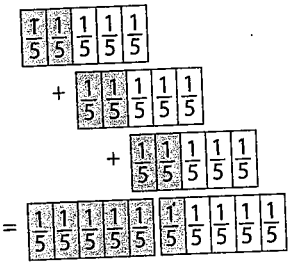
For help with #1 to #3, refer to Examples 1 and 2 on pages 133–134.

1. What multiplication statement does each model represent?

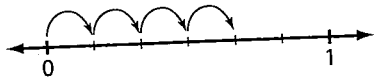
a)



b)



c)



2. Use a model of your choice to determine each product.

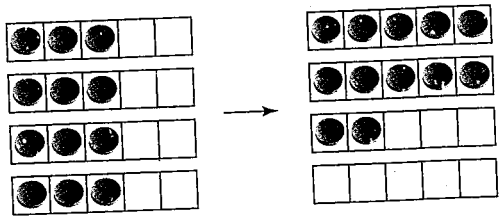
a) $4 \times \frac{1}{2}$

b) $3 \times \frac{7}{10}$

c) $5 \times \frac{2}{3}$

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

3. Makoto found his own way to model $4 \times \frac{3}{5}$ by using counters on grids.



a) Why did he use five-by-one grids?

b) Why did he use four grids?

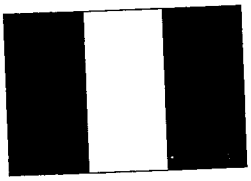
c) How does Makoto's model show the product?

Apply

For help with #4 and #5, refer to Example 3 on pages 134–135.

4. a) The width of a Canadian flag is $\frac{1}{2}$ of its length. What is the width of a Canadian flag that is 4 m long?

b) The width of a French flag is $\frac{2}{3}$ its length. What is the width of a French flag that is 4 m long?

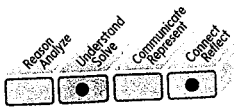


c) Which flag has a larger area? How do you know?

5. A minibus that seats 12 people is $\frac{3}{4}$ full. How many people are seated in the minibus?

6. a) What fraction of the surface area of a cube is the area of one face?

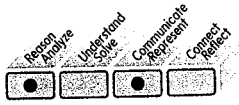
b) What is the area of each face of a cube of surface area 18 cm^2?



7. Ron's car uses 12 L of gasoline per 100 km of highway driving. Asma's car uses only $\frac{5}{6}$ as much fuel. How much fuel does Asma's car use per 100 km of highway driving?

8. Vancouver Island is approximately $\frac{1}{30}$ of the area of British Columbia. The area of British Columbia is 944 735 km^2. What is the approximate area of Vancouver Island?

9. ✓ **Competency Check** Suppose a friend knows how to multiply whole numbers, but not fractions.



a) How could you use the following pattern to show your friend how to calculate $\frac{1}{2} \times 10$?

$4 \times 10 = 40$
$2 \times 10 = 20$
$1 \times 10 = 10$
$\frac{1}{2} \times 10 = \blacksquare$

b) Make up a pattern to show your friend how to calculate $\frac{1}{3} \times 9$.

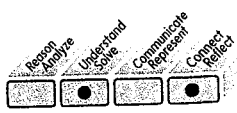
c) Explain to your friend another way to model and solve $\frac{1}{3} \times 9$.

10. Traditional First Nations communities shared their harvest among families based on the size of each family. Suppose 24 baskets of fish were caught on a particular day at a weir. The fish are shared among the families according to the fractions $\frac{1}{3}$, $\frac{1}{6}$, $\frac{5}{12}$, and $\frac{1}{12}$. How many baskets of fish did each family receive?

Extend

11. A class has 30 students. Four fifths of them have brown eyes. How many students do not have brown eyes?

12. The perimeter of an isosceles triangle is 15 cm. The shortest side equals $\frac{1}{5}$ of the perimeter. What are the lengths of sides?



13. Consider the equation $a \times \frac{1}{b} =$ product. Complete the following statements using $<$, $>$, or $=$.

a) If $a > b$, then the product is $\blacksquare$ 1.

b) If $a = b$, then the product is $\blacksquare$ 1.

c) If $a < b$, then the product is $\blacksquare$ 1.