



Name \_\_\_\_\_ Date \_\_\_\_\_

## Estimating Products (pages 268–270)

You can use **compatible numbers** to estimate products when multiplying fractions. Compatible numbers are easy to divide mentally.

### EXAMPLES

**A** Estimate  $\frac{1}{4} \times 13$ .

$\frac{1}{4} \times 13$  means  $\frac{1}{4}$  of 13.

$\frac{1}{4} \times 12 = \underline{\quad ? \quad}$  For 13, the nearest multiple of 4 is 12.  
4 and 12 are compatible numbers because  $12 \div 4 = 3$ .

$\frac{1}{4} \times 12 = 3$ , so the product of  $\frac{1}{4}$  and 13 is about 3.

**B** Estimate  $\frac{2}{3} \times 17$ .

$\frac{1}{3} \times 18 = 6$  For 17, the nearest multiple of 3 is 18.

$\frac{1}{3}$  of 18 is 6.

$\frac{2}{3} \times 18 = 12$  Since  $\frac{1}{3}$  of 18 is 6, it follows that  $\frac{2}{3}$  of 18 is  $2 \times 6$  or 12.

So,  $\frac{2}{3} \times 17$  is about 12.

You can also estimate products by rounding fractions to 0,  $\frac{1}{2}$ , or 1, and by rounding mixed numbers to the nearest whole numbers.

### Try These Together

**Estimate each product.**

1. Estimate  $\frac{1}{5} \times 9$

*HINT: For 9, what is the nearest multiple of 5?*

2. Estimate  $\frac{5}{6} \times 22$ .

*HINT: For 22, what is the nearest multiple of 6?*

### PRACTICE

**Estimate each product.**

3.  $\frac{1}{5} \times 24$

4.  $\frac{1}{6} \times 5$

5.  $\frac{5}{8} \times 42$

6.  $2\frac{1}{4} \times 3\frac{1}{3}$

7.  $\frac{1}{10} \times \frac{5}{8}$

8.  $6\frac{2}{3} \times 1\frac{4}{5}$

9.  $\frac{4}{9} \times 14$

10.  $3\frac{4}{5} \times 7\frac{1}{8}$

11.  $4\frac{7}{9} \times 2\frac{1}{6}$



**12. Standardized Test Practice** Ann receives an allowance of \$10 a week.

She spends about  $\frac{2}{3}$  of her allowance on school lunches and about  $\frac{1}{6}$  on entertainment. About how much does she have left?

**A** \$2

**B** \$0

**C** \$8

**D** \$1

Answers: Sample answers are given. 1. 2 2. 20 3. 5 4. 1 5. 25 6. 6 7. 0 8. 14 9. 7 10. 28 11. 10 12. A