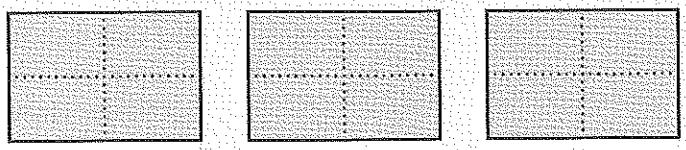
Exercise 17

Dividing Whole Numbers by Fractions

Divide a whole number by a fraction by rewriting the whole number as an improper fraction and inverting the divisor. Change the operation sign and multiply.

How many $\frac{1}{4}$s are in 3?



Divide. $3 \div \frac{1}{4}$

Rewrite the whole as an improper fraction.
Invert the divisor and change the operation sign.

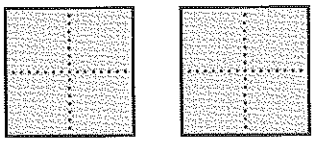
$\frac{3}{1} \times \frac{4}{1}$

Multiply.

$\frac{3}{1} \times \frac{4}{1} = \frac{12}{1} = 12$

Look at the figures. Divide to solve the problems.

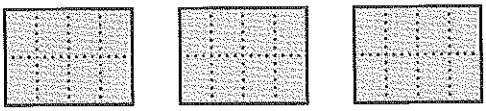
1.



How many $\frac{1}{4}$s are there in 2?

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

2.



How many $\frac{1}{8}$s are there in 3?

$3 \div \frac{1}{8} =$

Divide. Reduce your answer to lowest terms.

3. $4 \div \frac{2}{3} =$

4. $7 \div \frac{4}{5} =$

5. $2 \div \frac{5}{6} =$

6. $9 \div \frac{1}{2} =$

7. $2 \div \frac{6}{9} =$

8. $8 \div \frac{6}{10} =$

9. $10 \div \frac{4}{5} =$

10. $6 \div \frac{4}{9} =$

11. $12 \div \frac{3}{4} =$

12. $7 \div \frac{4}{6} =$

13. $4 \div \frac{7}{9} =$

14. $11 \div \frac{8}{12} =$

15. $34 \div \frac{4}{6} =$

16. $23 \div \frac{2}{10} =$

17. $120 \div \frac{4}{5} =$

18. $89 \div \frac{2}{3} =$

19. $45 \div \frac{1}{5} =$

20. $90 \div \frac{6}{7} =$

Directions: Choose the one best answer to each item. Circle the number of the correct answer.

21. Ben wants to make a chart, so he measures off a 12-inch line on a large sheet of paper. He needs to mark $\frac{3}{4}$-inch intervals so that he can make the boxes for his chart. How many boxes will he make across?

(1) 10 boxes
(2) 12 boxes
(3) 14 boxes
(4) 16 boxes
(5) 18 boxes

22. Tonya has a piece of lumber that is 6 feet long. She needs to cut $\frac{3}{4}$-foot sections. How many sections can she cut?

(1) 4 sections
(2) 8 sections
(3) 12 sections
(4) 16 sections
(5) 18 sections

23. If a plumber cuts a 7-foot pipe into $\frac{7}{8}$-foot sections, how many pieces will he have?

(1) 56 pieces
(2) 40 pieces
(3) 24 pieces
(4) 16 pieces
(5) 8 pieces

24. A hair stylist has 2 gallons of shampoo and wants to put a bottle of shampoo at each workstation. If each bottle holds $\frac{1}{6}$ gallon, how many bottles can she fill?

(1) 2 bottles
(2) 6 bottles
(3) 8 bottles
(4) 12 bottles
(5) 24 bottles

25. A gardener wants to plant flowers in a 9-foot-long bed. The directions say to plant seedlings $\frac{1}{4}$ foot apart. How many $\frac{1}{4}$-foot spaces are there?

(1) 36 spaces
(2) 26 spaces
(3) 9 spaces
(4) 13 spaces
(5) 30 spaces

26. A chef has four one-pound blocks of butter for a recipe. She needs to cut sticks that are $\frac{1}{3}$ pound each. How many sticks of butter will she cut?

(1) 10 sticks
(2) 11 sticks
(3) 12 sticks
(4) 13 sticks
(5) 14 sticks

27. An automotive technician works 6 hours repairing cars. His time is charged in 20-minute time slots. The technician knows that 20 minutes is $\frac{1}{3}$ hour. Which division problem shows how many time slots there are in 6 hours?

(1) $6 \div 6 = ?$
(2) $6 \div \frac{2}{3} = ?$
(3) $20 \div \frac{2}{3} = ?$
(4) $20 \div \frac{1}{3} = ?$
(5) $6 \div \frac{1}{3} = ?$

28. In item 27, if it takes one 20-minute time slot to change oil, how many oil changes can the technician do in 6 hours?

(1) 6 oil changes
(2) 18 oil changes
(3) 12 oil changes
(4) 20 oil changes
(5) 24 oil changes