



# TABE Math-E

## PAXEN

### Unit-3 Multiply and Divide Whole Numbers

#### Lesson 21 Divide Within 100 (Find the Missing Factor)

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# Math-E - Lesson 21 – Divide Within 100

## Lesson 21

## Divide Within 100

3.OA.7 – Low

You can use fact families to solve division problems by using the multiplication facts that you already know. Consider a multiplication and division fact family:

$$4 \times 2 = 8$$

$$2 \times 4 = 8$$

$$8 \div 2 = 4$$

$$8 \div 4 = 2$$

The factors in a multiplication fact become the divisor (the number you divide by) and quotient (the answer) in the related division fact.

**Example** John has 5 bags of apples. Each bag contains the same number of apples. John has a total of 40 apples. How many apples are in each bag?

1) Determine what information you know and what the question is asking.

40 apples are divided equally among 5 bags.

How many apples are in each bag?

2) You can use a fact family to find the missing factor and solve the division problem:

$$5 \times 8 = 40$$

$$8 \times 5 = 40$$

$$40 \div 8 = 5$$

$$40 \div 5 = 8$$

3) The fact family shows that  $5 \times 8 = 40$ , which means that  $40 \div 5 = 8$ .

There are 8 apples in each bag.

### Test Example

1. Kendra puts 12 boxes of rice into rows on a shelf at the store. 3 boxes fit in each row. Which fact family will help her determine how many rows she will need to make?

A.  $1 \times 12 = 12$ ;  $12 \times 1 = 12$ ;  $12 \div 12 = 1$ ;  $12 \div 1 = 12$

B.  $2 \times 6 = 12$ ;  $6 \times 2 = 12$ ;  $12 \div 2 = 6$ ;  $12 \div 6 = 2$

C.  $3 \times 4 = 12$ ;  $4 \times 3 = 12$ ;  $12 \div 4 = 3$ ;  $12 \div 3 = 4$

D.  $3 + 12 = 15$ ;  $12 + 3 = 15$ ;  $15 - 12 = 3$ ;  $15 - 3 = 12$

1. C  $3 \times 4 = 12$ ; therefore  $12 \div 3 = 4$ . Twelve boxes divided equally into groups of 3 makes 4 rows.

### Hint

Some numbers have many factors. Be sure to use ones that match the given information for the problem.

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## Practice

Read each question. Select the correct answer.

- 1** Bianca earns \$45 babysitting. She works for 5 hours. How much does Bianca earn per hour?
- A. \$6                                      B. \$7  
C. \$8                                      D. \$9
- 2** Mattias sold 49 fish today. He sold the same number of fish each of the 7 hours he worked. How many fish did he sell per hour?
- A. 6                                        B. 7  
C. 8                                        D. 9
- 3** Amit is planting seeds. He has 18 seeds. He makes 6 holes. Which fact family will help him determine how many seeds he needs to put in each hole?
- A.  $3 + 15 = 18$ ;  $15 + 3 = 18$ ;  
 $18 - 15 = 3$ ;  $18 - 3 = 15$   
B.  $1 \times 18 = 18$ ;  $18 \times 1 = 18$ ;  
 $18 \div 1 = 18$ ;  $18 \div 18 = 1$   
C.  $2 \times 9 = 18$ ;  $9 \times 2 = 18$ ;  
 $18 \div 9 = 2$ ;  $18 \div 2 = 9$   
D.  $6 \times 3 = 18$ ;  $3 \times 6 = 18$ ;  
 $18 \div 6 = 3$ ;  $18 \div 3 = 6$
- 4** Laura buys 25 strawberries at the store. She divides the strawberries equally between 5 bowls. How many strawberries does she put into each bowl?
- A. 5                                        B. 4  
C. 3                                        D. 2
- 5** Cara cooks 36 hot dogs on the grill. There are 12 people at her picnic. Each person eats the same number of hot dogs, and there no hot dogs left over. How many hot dogs does each person eat?
- A. 3                                        B. 4  
C. 6                                        D. 7
- 6** Ricardo prints 24 photographs. He places 6 photographs in each envelope. Which fact family can Ricardo use to determine how many envelopes he needs?
- A.  $2 \times 12 = 24$ ;  $12 \times 2 = 24$ ;  
 $24 \div 12 = 2$ ;  $24 \div 2 = 12$   
B.  $3 \times 8 = 24$ ;  $8 \times 3 = 24$ ;  
 $24 \div 8 = 3$ ;  $24 \div 3 = 8$   
C.  $4 \times 6 = 24$ ;  $6 \times 4 = 24$ ;  
 $24 \div 6 = 4$ ;  $24 \div 4 = 6$   
D.  $24 + 6 = 30$ ;  $6 + 24 = 30$ ;  
 $30 - 6 = 24$ ;  $30 - 24 = 6$
- 7** A store charges \$9 for 3 cartons of orange juice. How much does each carton of orange juice cost?
- A. \$12                                      B. \$9  
C. \$6                                        D. \$3
- 8** Jasmine spends \$64 on holiday gifts. Each gift costs \$8. How many gifts does Jasmine buy?
- A. 5                                        B. 9  
C. 8                                        D. 7
- 9** 16 students play a friendly game of soccer. They want to make 2 teams. How many students should be on each team?
- A. 8                                        B. 6  
C. 4                                        D. 2
- 10** Peter folds 30 towels. He puts 6 towels in each stack. How many stacks of towels does Peter make?
- A. 4                                        B. 5  
C. 6                                        D. 7

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## Lesson 21

## Divide Within 100

(3.OA.7)

- 1. D.**  $45 \div 5 = 9$  because  $5 \times 9 = 45$ . Bianca earns \$9 per hour.
- 2. B.**  $49 \div 7 = 7$  because  $7 \times 7 = 49$ . Mattias sold 7 fish per hour.
- 3. D.**  $18 \div 6 = 3$  because  $6 \times 3 = 18$ .  $18 \div 3 = 6$  because  $3 \times 6 = 18$ .
- 4. A.**  $25 \div 5 = 5$  because  $5 \times 5 = 25$ . Laura puts 5 strawberries into each bowl.
- 5. A.**  $36 \div 12 = 3$  because  $12 \times 3 = 36$ . Each person eats 3 hot dogs.
- 6. C.**  $24 \div 6 = 4$  because  $6 \times 4 = 24$ .  $24 \div 4 = 6$  because  $4 \times 6 = 24$ .
- 7. D.**  $9 \div 3 = 3$  because  $3 \times 3 = 9$ . Each carton of orange juice costs \$3.
- 8. C.**  $64 \div 8 = 8$  because  $8 \times 8 = 64$ . Jasmine buys 8 gifts.
- 9. A.**  $16 \div 2 = 8$  because  $2 \times 8 = 16$ . 8 students should be on each team.
- 10. B.**  $30 \div 6 = 5$  because  $6 \times 5 = 30$ . Peter makes 5 stacks of towels.

# Math-E - Practice 21 – Divide Within 100

## Practice 21

## Divide Within 100

3.OA.7 – Low

- 1 A stairway railing has 36 balusters. There are three balusters for each foot of railing. What is the length of the railing?
- A. 3 ft                      B. 4 ft  
C. 9 ft                      D. 12 ft
- 2 Five friends share 40 chicken nuggets equally. How many chicken nuggets does each friend eat?
- A. 10 nuggets  
B. 9 nuggets  
C. 8 nuggets  
D. 7 nuggets
- 3 Jerry has a pill organizer with seven compartments, one for each day of the week. He takes 42 pills each week. Which fact family shows the number of pills in each compartment?
- A.  $7 \div 1 = 7$ ;  $1 \times 7 = 7$ ;  
 $7 \times 1 = 7$ ;  $7 \div 7 = 1$   
B.  $42 \div 7 = 6$ ;  $7 \times 6 = 42$ ;  
 $6 \times 7 = 42$ ;  $42 \div 6 = 7$   
C.  $42 \div 1 = 42$ ;  $42 \times 1 = 42$ ;  
 $1 \times 42 = 42$ ;  $42 \div 42 = 1$   
D.  $42 + 7 = 49$ ;  $49 - 7 = 42$ ;  
 $7 + 42 = 49$ ;  $49 - 42 = 7$
- 4 One bottle contains enough laundry detergent to clean 36 loads of laundry. The staff at a hair salon washes six loads of laundry each day. How many days does one bottle of detergent last at the salon?
- A. 6 days                      B. 7 days  
C. 9 days                      D. 12 days
- 5 A daycare owner buys nine bins to organize dolls. There are 54 dolls that are all the same size. She puts the same number of dolls into each bin. How many dolls does the owner put into each bin?
- A. 5 dolls                      B. 6 dolls  
C. 7 dolls                      D. 8 dolls
- 6 A dog has a litter of 11 puppies. There are 11 families that want to adopt a puppy. How many puppies can each family adopt?
- A. 1 puppy  
B. 2 puppies  
C. 3 puppies  
D. The litter cannot be equally divided.
- 7 Lilianna divides 18 by 3. Which two facts help her check the calculation?
- A.  $18 - 3 = 15$   
B.  $3 \times 6 = 18$   
C.  $9 \times 2 = 18$   
D.  $2 \times 9 = 18$   
E.  $9 + 9 = 18$   
F.  $6 \times 3 = 18$
- 8 Seven friends equally split the cost of renting a boat. The rental costs \$84. How much does each friend pay?
- A. \$9  
B. \$10  
C. \$11  
D. \$12
- 9 A store manager runs a promotion that offers one free item for every 10 items purchased. McKenna buys 50 items. Which fact family will help McKenna determine the number of free items she receives?
- A.  $50 + 10 = 60$ ;  $10 + 50 = 60$ ;  
 $60 - 10 = 50$ ;  $60 - 50 = 10$   
B.  $20 \div 2 = 10$ ;  $10 \times 2 = 20$ ;  
 $20 \div 10 = 2$ ;  $2 \times 10 = 20$   
C.  $50 \div 10 = 5$ ;  $10 \times 5 = 50$ ;  
 $50 \div 5 = 10$ ;  $5 \times 10 = 50$   
D.  $55 \div 11 = 5$ ;  $11 \times 5 = 55$ ;  
 $55 \div 5 = 11$ ;  $5 \times 11 = 55$

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- 10 Raimy uses 15 pounds of pellets to smoke a roast. His smoker burns three pounds of pellets each hour. How many hours does Raimy use the smoker?
- A. 6 hr  
B. 5 hr  
C. 4 hr  
D. 3 hr
- 11 There are 48 geese swimming in a pond. There are eight geese in each family. How many families of geese are in the pond?
- A. 8 families  
B. 7 families  
C. 6 families  
D. 5 families
- 12 Gavin packs 72 books into boxes. Each box holds nine books. How many boxes does Gavin fill?
- A. 12 boxes  
B. 10 boxes  
C. 9 boxes  
D. 8 boxes
- 13 Ira's camper travels 11 miles on one gallon of gas. There is a campground 77 miles away. How many gallons of gas does Ira need to drive to the campground?
- A. 6 gal  
B. 7 gal  
C. 8 gal  
D. 10 gal
- 14 Saura needs 60 credits to graduate from school. She takes 12 credits each semester. How many semesters will it take for Saura to graduate?
- A. 4 semesters  
B. 5 semesters  
C. 6 semesters  
D. 7 semesters
- 15 Alejandro divides 0 by 7. Which two facts help him check the calculation?
- A.  $1 \times 7 = 7$   
B.  $7 \times 1 = 7$   
C.  $7 - 0 = 7$   
D.  $7 + 0 = 7$   
E.  $7 \times 0 = 0$   
F.  $0 \times 7 = 0$
- 16 Rusty has 30 minutes to study for a test. The test covers six lessons. Rusty wants to spend the same amount of time studying each lesson. How many minutes can Rusty study each lesson?
- A. 5 min  
B. 6 min  
C. 7 min  
D. 8 min
- 17 Roberto prepares 24 deviled eggs for a cookout. A single boiled egg makes 2 deviled eggs. How many eggs does Roberto boil?
- A. 6 eggs  
B. 12 eggs  
C. 24 eggs  
D. 48 eggs
- 18 Malia uses a 9-month no-interest payment plan to purchase a pair of bifocal glasses for \$99. How much does Malia pay each month for her bifocals?
- A. \$8  
B. \$9  
C. \$10  
D. \$11
- 19 Andre's employer allows one break during every four-hour shift. In a 20-hour work-week, how many breaks can Andre take?
- A. 5 breaks  
B. 6 breaks  
C. 7 breaks  
D. 8 breaks
- 20 Kadeem uses nine cups of birdseed to fill three bird feeders equally. How many cups of birdseed does Kadeem put into each feeder?
- A. 2 cups  
B. 3 cups  
C. 4 cups  
D. 5 cups

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3.OA.7

1. D.  $36 \div 3 = 12$  because  $3 \times 12 = 36$ . The railing is 12 feet long.
2. C.  $40 \div 5 = 8$  because  $5 \times 8 = 40$ . Each friend eats 8 nuggets.
3. B.  $42 \div 7 = 6$  because  $7 \times 6 = 42$ . The fact family also includes  $42 \div 6 = 7$  because  $6 \times 7 = 42$ .
4. A.  $36 \div 6 = 6$  because  $6 \times 6 = 36$ . One bottle lasts 6 days.
5. B.  $54 \div 9 = 6$  because  $9 \times 6 = 54$ . The owner puts 6 dolls into each bin.
6. A.  $11 \div 11 = 1$  because  $11 \times 1 = 11$ . Each family can adopt 1 puppy.
7. B, F.  $18 \div 3 = 6$  because  $3 \times 6 = 18$  and  $6 \times 3 = 18$ .
8. D.  $84 \div 7 = 12$  because  $7 \times 12 = 84$ . Each friend pays \$12.
9. C.  $50 \div 10 = 5$  because  $10 \times 5 = 50$ . The fact family also includes  $50 \div 5 = 10$  because  $5 \times 10 = 50$ .
10. B.  $15 \div 3 = 5$  because  $3 \times 5 = 15$ . Raimy uses the smoker for 5 hours.
11. C.  $48 \div 8 = 6$  because  $8 \times 6 = 48$ . There are 6 families of geese in the pond.
12. D.  $72 \div 9 = 8$  because  $9 \times 8 = 72$ . Gavin fills 8 boxes.
13. B.  $77 \div 11 = 7$  because  $11 \times 7 = 77$ . Ira needs 7 gallons of gas.
14. B.  $60 \div 12 = 5$  because  $12 \times 5 = 60$ . Saura graduates in 5 semesters.
15. E, F.  $0 \div 7 = 0$  because  $7 \times 0 = 0$  and  $0 \times 7 = 0$ .
16. A.  $30 \div 6 = 5$  because  $6 \times 5 = 30$ . Rusty can study each lesson for 5 minutes.
17. B.  $24 \div 2 = 12$  because  $2 \times 12 = 24$ . Roberto boils 12 eggs.
18. D.  $99 \div 9 = 11$  because  $9 \times 11 = 99$ . Malia pays \$11 each month.
19. A.  $20 \div 4 = 5$  because  $4 \times 5 = 20$ . Andre can take 5 breaks.
20. B.  $9 \div 3 = 3$  because  $3 \times 3 = 9$ . Kadeem puts 3 cups of birdseed into each feeder.