

Name _____

Date _____

Mental Math: Divide by Multiples of 10

Example

Find $36,000 \div 90$.

Begin with a basic fact.

$$36 \div 9 = 4 \leftarrow \text{basic fact}$$

$$360 \div 90 = 4$$

$$3,600 \div 90 = 40$$

$$36,000 \div 90 = 400$$

Use basic facts to help you divide.

1. $54 \div 9$ _____ 2. $48 \div 8$ _____

$540 \div 90$ _____ $480 \div 80$ _____

$5,400 \div 90$ _____ $4,800 \div 80$ _____

$54,000 \div 90$ _____ $48,000 \div 80$ _____

3. $63 \div 7$ _____

$630 \div 70$ _____

$6,300 \div 70$ _____

$63,000 \div 70$ _____

4. $42 \div 7$ _____

$420 \div 70$ _____

$4,200 \div 70$ _____

$42,000 \div 70$ _____

5. $35 \div 5$ _____

$350 \div 50$ _____

$3,500 \div 50$ _____

$35,000 \div 50$ _____

6. $20 \div 4$ _____

$200 \div 40$ _____

$2,000 \div 40$ _____

$20,000 \div 40$ _____

7. $45 \div 5$ _____

$450 \div 50$ _____

$4,500 \div 50$ _____

$45,000 \div 50$ _____

8. $36 \div 6$ _____

$360 \div 60$ _____

$3,600 \div 60$ _____

$36,000 \div 60$ _____

9. $30 \overline{)1,500}$

10. $70 \overline{)490}$

11. $60 \overline{)30,000}$

12. $90 \overline{)2,700}$

13. $40 \overline{)24,000}$

14. $50 \overline{)2,500}$

15. $80 \overline{)320}$

16. $20 \overline{)60,000}$

Problem Solving • Reasoning

17. The teacher has 120 apples to be divided among 40 students. How many apples does each student get? Explain how you got your answer.

18. The principal bought 500 pencils for the school. If the pencils come in boxes of 50, how many boxes of pencils did she buy? Explain how you got your answer.

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One-Digit Quotients

Divide. Check your answer.

Example

Find $169 \div 42$.

Check your answer.

$$\begin{array}{r} 4 \text{ R}1 \\ 42 \overline{)169} \\ \underline{-168} \\ 1 \end{array}$$

$$\begin{array}{r} 42 \\ \times 4 \\ \hline 168 + 1 = 169 \end{array}$$

1. $47 \overline{)423}$

2. $32 \overline{)258}$

3. $25 \overline{)179}$

4. $29 \overline{)185}$

5. $24 \overline{)213}$

6. $54 \overline{)499}$

7. $32 \overline{)296}$

8. $65 \overline{)129}$

9. $364 \div 46$ _____

10. $235 \div 35$ _____

11. $679 \div 73$ _____

12. $738 \div 82$ _____

13. $398 \div 67$ _____

14. $421 \div 57$ _____

Problem Solving • Reasoning

15. Cindy made 245 cookies for a fourth grade party. There are 49 students in the fourth grade. If shared equally, how many cookies can each student get?

16. Harry has a ball of kite string that is 120 meters long. If every kite needs 13 meters of string, how many kites can be flown using Harry's string?

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Estimate the Quotient

Example

Estimate $64 \div 14$

$$\begin{array}{c} \downarrow \quad \downarrow \\ 60 \div 10 = 6 \end{array}$$

$64 \div 14$ is about 6.

Copy and complete each exercise. Use a new dividend and a new divisor to estimate.

1. $63 \div 16$
 $\downarrow \quad \downarrow$
 $\underline{\quad} \div 20 = \underline{\quad}$

2. $48 \div 13$
 $\downarrow \quad \downarrow$
 $\underline{\quad} \div 10 = \underline{\quad}$

3. $95 \div 23$
 $\downarrow \quad \downarrow$
 $\underline{\quad} \div 20 = \underline{\quad}$

4. $78 \div 36$
 $\downarrow \quad \downarrow$
 $\underline{\quad} \div 40 = \underline{\quad}$

5. $53 \div 12$
 $\downarrow \quad \downarrow$
 $\underline{\quad} \div 10 = \underline{\quad}$

6. $43 \div 21$
 $\downarrow \quad \downarrow$
 $\underline{\quad} \div 20 = \underline{\quad}$

7. $123 \div 18$
 $\downarrow \quad \downarrow$
 $\underline{\quad} \div 20 = \underline{\quad}$

8. $86 \div 27$
 $\downarrow \quad \downarrow$
 $\underline{\quad} \div 30 = \underline{\quad}$

9. $76 \div 15$
 $\downarrow \quad \downarrow$
 $\underline{\quad} \div \underline{\quad} = \underline{\quad}$

10. $267 \div 34$
 $\downarrow \quad \downarrow$
 $\underline{\quad} \div \underline{\quad} = \underline{\quad}$

11. $179 \div 62$
 $\downarrow \quad \downarrow$
 $\underline{\quad} \div \underline{\quad} = \underline{\quad}$

12. $352 \div 47$
 $\downarrow \quad \downarrow$
 $\underline{\quad} \div \underline{\quad} = \underline{\quad}$

13. $315 \div 38$
 $\downarrow \quad \downarrow$
 $\underline{\quad} \div \underline{\quad} = \underline{\quad}$

14. $238 \div 78$
 $\downarrow \quad \downarrow$
 $\underline{\quad} \div \underline{\quad} = \underline{\quad}$

15. $249 \div 52$
 $\downarrow \quad \downarrow$
 $\underline{\quad} \div \underline{\quad} = \underline{\quad}$

16. $716 \div 82$
 $\downarrow \quad \downarrow$
 $\underline{\quad} \div \underline{\quad} = \underline{\quad}$

17. $903 \div 96$
 $\downarrow \quad \downarrow$
 $\underline{\quad} \div \underline{\quad} = \underline{\quad}$

Problem Solving • Reasoning

18. Doug has 117 stamps. He wants to divide them among 32 friends. About how many will each of his friends get?

19. Jill has 182 hair ribbons. She wants to give ribbons to 24 friends. About how many will each of her friends get?

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Problem-Solving Skill: Multistep Problems

Solve.

- Holly has 6 dozen eggs. She needs to divide them into cartons that hold 6 eggs each. How many of these cartons can she fill?
- Alec has 63 novels and 35 fact books. His bookcase has 5 shelves. How many books can he put on each shelf? Will there be any books left over?

Think: How many eggs does Holly have?

Think: How many books are there in all?

Solve. Use these or other strategies.

Problem-Solving Strategies

- Draw a Picture
- Make a Table
- Guess and Check
- Write an Equation

- There are 275 seats in the theater. Seventy-five families, each with 4 people, buy tickets. How many shows will there have to be to seat everyone?
- Mr. Perez has an order for 12 dozen wooden cars. He has made 54 so far. How many more does he have to make?

- Amy, Beth, Cindy, and Dawn are standing in line. Amy is behind Dawn. Beth is not next to Cindy. Cindy is first in line. In what order are they standing?
- Ron gets 5¢ for every dandelion and 2¢ for any other weed he pulls out of the lawn. He pulls 53 dandelions and 126 other weeds. How much money will Ron get?

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Two-Digit Quotients

Example

Find $198 \div 12$.

Check your answer.

$$\begin{array}{r} 16 \text{ R}6 \\ 12 \overline{)198} \\ \underline{-12} \\ 78 \\ \underline{-72} \\ 6 \end{array}$$

$$\begin{array}{r} 16 \\ \times 12 \\ \hline 32 \\ 160 \\ \hline 192 + 6 = 198 \end{array}$$

Divide.

1. $65 \overline{)729}$

2. $25 \overline{)849}$

3. $34 \overline{)719}$

4. $52 \overline{)958}$

5. $47 \overline{)729}$

6. $96 \overline{)4,416}$

7. $35 \overline{)985}$

8. $63 \overline{)1,679}$

9. $82 \overline{)2,338}$

10. $47 \overline{)3,396}$

11. $54 \overline{)4,219}$

12. $1,392 \div 26$

13. $765 \div 42$

14. $648 \div 45$

15. $3,651 \div 94$

Problem Solving • Reasoning

16. One classroom can hold 34 students. The Worthington School District expects to have 7,582 students. How many classrooms will it need to hold everyone?
- _____

17. There are 2,583 children at Oak Elementary School. School buses can hold 62 children. How many buses will it take to carry all the students?
- _____

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Adjusting the Quotient

Example

Find $46\overline{)418}$.Estimate: $50\overline{)400}$

$$\begin{array}{r} 8 \\ 46\overline{)418} \\ \underline{-368} \\ 50 \end{array} \qquad \begin{array}{r} 9 \text{ R}4 \\ 46\overline{)418} \\ \underline{-414} \\ 4 \end{array}$$

$50 > 46$

So 8 is too small.

Write *too large* or *too small* for each first estimate of the quotient. Then find the correct answer.

1. $64\overline{)123}$

2. $26\overline{)251}$

3. $34\overline{)121}$

4. $72\overline{)525}$

5. $46\overline{)529}$

6. $84\overline{)418}$

7. $29\overline{)186}$

8. $32\overline{)298}$

9. $68\overline{)559}$

10. $94\overline{)452}$

11. $86\overline{)729}$

Problem Solving • Reasoning

12. Jenna is baking pies. Each pie has 8 slices. She needs to feed 296 people. She estimates that she will need to bake 30 pies. Is she right? Why or why not?

13. Joe is installing pipes that are 12 feet long. He has to lay 466 feet of pipe. He estimates that he will need 47 pipes. Is he right? Why or why not?

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Problem-Solving Strategy: Solve a Simpler Problem

Boys' Polo Shirts	\$8.99
Girls' Blouses	\$7.99
Boys' Pants	\$11.88
Girls' Skirts	\$14.98
Boys' Tee Shirts	\$7.77
Boys' Athletic Shoes	\$56.55
Boys' Sweaters	\$12.35
Boys' Socks	\$1.95
Girls' Socks	\$1.95
Girls' Tee Shirts	\$7.77
Girls' Athletic Shoes	\$42.88
Girls' Sweaters	\$15.95

The Shopping Trip

Brett and Andrea are going shopping for school clothes. First they look at the prices in the newspaper. Then they go to their favorite department store. Here are the prices from the newspaper ad. Use them to help you answer the question.

- Brett's mother says he can buy athletic shoes if he earns half the money himself. Brett makes \$5.50 a week delivering newspapers. How long will it take him to earn enough money?
- Andrea is saving up to buy a sweater. She baby-sits for \$2.50 an hour. How many hours will she have to baby-sit so that she can afford to buy herself a sweater?

Think:

How much money does Brett need to earn?

Think:

How much will Andrea earn in 2 hours? In 3 hours?

Solve. Use these or other strategies.

Problem-Solving Strategies

- Draw a Picture
- Write an Equation
- Solve a Simpler Problem
- Guess and Check

- Brett plans to buy athletic shoes, a polo shirt, pants, and 4 tee shirts. He has \$110. Will he have enough money left over to buy socks?
- Andrea also needs to buy socks for gym class. How much will she need if she wants to have a pair of socks for each day of the school week?

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Zeros in Two-Digit Quotients

Example
Find $4,510 \div 50$.

$$\begin{array}{r} 90 \text{ R}10 \\ 50 \overline{)4,510} \\ \underline{-450} \\ 10 \end{array}$$

Divide.

1. $24 \overline{)729}$

2. $83 \overline{)1,675}$

3. $49 \overline{)4,418}$

4. $56 \overline{)3,937}$

5. $33 \overline{)1,672}$

6. $21 \overline{)1,700}$

7. $47 \overline{)2,362}$

8. $62 \overline{)1,870}$

9. $36 \overline{)2,901}$

10. $74 \overline{)2,993}$

11. $85 \overline{)3,479}$

12. $1,181 \div 13$

13. $1,392 \div 23$

14. $3,546 \div 59$

15. $2,529 \div 36$

16. $4,425 \div 55$

17. $2,449 \div 61$

18. $756 \div 37$

19. $5,183 \div 74$

20. $846 \div 14$

21. $3,241 \div 46$

22. $5,763 \div 72$

23. $2,610 \div 29$

Problem Solving • Reasoning

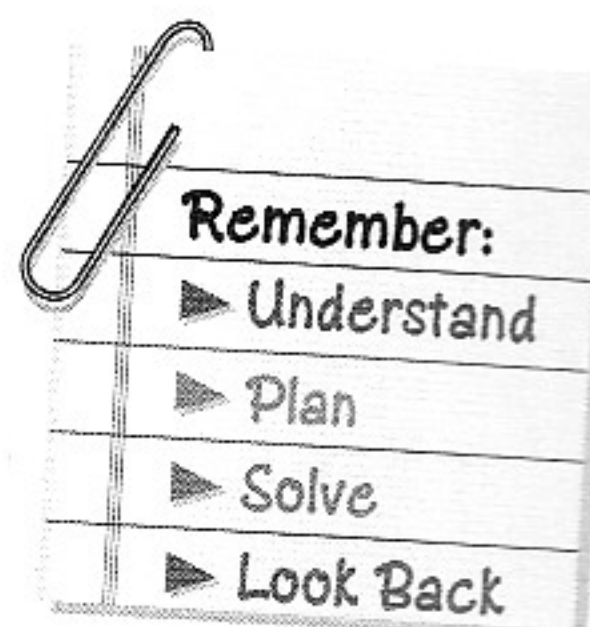
24. The class has collected 6,760 soda can tabs. They need to sort them, with 75 tabs in each box. How many boxes will they need? How many tabs are left over?

25. Brad has 333 decorations. He must put 16 decorations in each window. How many windows can he decorate? How many decorations are left over?

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Problem-Solving Application: Use Operations



Solve.

- Katie has joined a 10-week-long reading club. To get a prize, she must read 6 books each week. It takes her 5 hours to read one book. How many total hours will she have to spend reading to get a prize?
- The librarian is putting books on the shelves. She has 24 cartons of books. Each carton contains 24 books. She can fit 40 books on a shelf. How many shelves can she fill? How many books are left over?

Think:

What operation should I do first? What operation should I do next?

Think:

What operation or operations do I need to solve this problem?

Solve. Use these or other strategies to solve each problem.

Problem-Solving Strategies

- Draw a Picture
- Write an Equation
- Solve a Simpler Problem
- Guess and Check

- There are 40 apples in every bushel. Ben makes 10¢ profit on every apple. If he sold 50 bushels of apples, how much profit would he make?
 - In 2 hours a worker can pick 3 bushels of apples. There are 36 people who work 6 hours a day picking apples. How many bushels of apples can they pick in one day?
 - You can pick a bushel of apples in 20 minutes. Is it better to get paid \$2.25 for each bushel you pick or \$6.25 for each hour you work?
 - You are paid \$2.25 for every bushel of apples you pick. You can pick 18 bushels a day. After 20 days, how much money will you have earned?
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