Multiplication and Division are Inverse Operations

3, 12, 36

3 x 12 = 36

12 x 3 = 36

36 ÷ 12 = 3

36 ÷ 3 = 12

"Inverse Operations"

"Opposite Jobs"

They are inverse because you are taking a multiplication sentence and reversing it (not to be confused with the commutative property because we are not reordering factors - Division is **not** commutative).

Division

Just as multiplication is really a short-cut for repeated addition, division is really a short-cut for repeated subtraction.

15 ÷ 5 = ? means how many times can I subtract 5 from 15.

15

- 5 1 time

10

- 5 2 times

5

- 5 3 times

0

I subtracted 5 three times from 15 before I ended at 0, so 15 ÷ 5 = 3

You try:

a) $12 \div 4 = ?$

b) $15 \div 4 = ?$

Division Vocabulary

rd:	Definition:	Examples:	
division	repeated subtraction • sharing fairly • making equal groups	$15 \div 5 = 3$ $15 - 5$ 1 time $10 - 5$ 2 times $5 - 5$ 3 times 0	
dividend	the number that is being divided	$8 \div 2 = 4$ $2\overline{)8}$ $\frac{8}{2} = 4$	
divisor	the number that is doing the division	$8 \div 2 = 4$ $2\overline{)8}$ $\frac{8}{2} = 4$	
quotient	the answer to a division problem	$8 \div 2 = 4$ $2\overline{)8}$ $\frac{8}{2} = 4$	
remainder	in whole number division, when you have divided as far as you can, what you have left over is called the remainder	$8 \div 3 = 2$ R 2 $8 \div 3 = 2\frac{2}{3}$	

1. $42 \div 7 =$ _____
2. $64 \div 8 =$ _____
3. $72 \div 8 =$ _____
4. $96 \div 12 =$ _____
5. $88 \div 11 =$ _____
6. $35 \div 7 =$ _____
7. $21 \div 3 =$ _____
8. $45 \div 5 =$ _____
9. $72 \div 12 =$ _____
10. $110 \div 10 =$ _____
11. $28 \div 4 =$ _____
12. $63 \div 9 =$ _____
13. $84 \div 7 =$ _____
14. $32 \div 8 =$ _____
15. $42 \div 6 =$ _____
16. $56 \div 7 =$ _____
17. $14 \div 7 =$ _____
18. $12 \div 6 =$ _____
19. $18 \div 6 =$ _____
20. $40 \div 8 =$ _____
21. $36 \div 6 =$ _____
22. $63 \div 7 =$ _____
23. $55 \div 5 =$ _____
24. $70 \div 7 =$ _____
25. $60 \div 12 =$ _____
26. $24 \div 6 =$ _____
27. $49 \div 7 =$ _____
28. $48 \div 8 =$ _____
29. $25 \div 5 =$ _____
30. $120 \div 10 =$ _____
31. $36 \div 9 =$ _____
32. $45 \div 5 =$ _____
33. $16 \div 4 =$ _____
34. $81 \div 9 =$ _____
35. $8 \div 4 =$ _____
36. $16 \div 4 =$ _____
37. $50 \div 5 =$ _____
38. $33 \div 11 =$ _____
39. $48 \div 6 =$ _____
40. $54 \div 9 =$ _____
41. $24 \div 3 =$ _____
42. $27 \div 9 =$ _____
43. $39 \div 3 =$ _____
44. $96 \div 8 =$ _____
45. $60 \div 12 =$ _____
46. $16 \div 2 =$ _____
47. $72 \div 8 =$ _____
48. $32 \div 4 =$ _____
49. $56 \div 8 =$ _____
50. $84 \div 12 =$ _____

Name:_____ Date:_____

THREE FORMATS FOR WRITING DIVISION PROBLEMS

As a Sentence	As a Fraction	Using the ⟌ Symbol
$48 \div 6 = 8$		
		$9\overline{)72}$
	$\frac{40}{4}$	
		$12\overline{)144}$
$56 \div 8 = 7$		
	$\frac{60}{3}$	
		$4\overline{)32}$
	$\frac{60}{12}$	
$64 \div 2 = 32$		
		$3\overline{)45}$
	$\frac{48}{4}$	
	$\frac{87}{3}$	
$63 \div 9 =$		
		$7\overline{)42}$

PRACTICE Quotients and Remainders

Divide.

1. $7 \div 2 =$ _____
2. $23 \div 4 =$ _____
3. $13 \div 3 =$ _____
4. $44 \div 5 =$ _____
5. $38 \div 6 =$ _____
6. $17 \div 4 =$ _____
7. $23 \div 3 =$ _____
8. $33 \div 9 =$ _____
9. $35 \div 8 =$ _____
10. $29 \div 4 =$ _____
11. $39 \div 7 =$ _____
12. $14 \div 4 =$ _____
13. $52 \div 8 =$ _____
14. $11 \div 3 =$ _____
15. $20 \div 7 =$ _____
16. $39 \div 5 =$ _____
17. $19 \div 2 =$ _____
18. $33 \div 5 =$ _____
19. $17 \div 3 =$ _____
20. $23 \div 6 =$ _____
21. $9 \div 2 =$ _____
22. $28 \div 5 =$ _____
23. $43 \div 9 =$ _____
24. $29 \div 6 =$ _____
25. $13 \div 8 =$ _____
26. $47 \div 7 =$ _____
27. $15 \div 2 =$ _____
28. $30 \div 4 =$ _____
29. $59 \div 9 =$ _____
30. $30 \div 8 =$ _____

Copy and complete the Input/Output table.

INPUT	OUTPUT
$10 \div 3 =$	
$27 \div 4 =$	
$44 \div 9 =$	
$37 \div 5 =$	
$34 \div 6 =$	
$17 \div 2 =$	
$74 \div 8 =$	

Use with pages 134–135.

THREE FORMATS FOR WRITING DIVISION PROBLEMS

As a Sentence	As a Fraction	Using the Symbol
$49 \div 8 = 6\frac{1}{8}$		
		$3\overline{)29}$
	$\frac{39}{7}$	
		$9\overline{)83}$
	$\frac{4}{5}$	
$74 \div 6 = 12\frac{1}{3}$		
		$8\overline{)3}$
	$\frac{12}{9}$	
$56 \div 12 = 4\frac{8}{12}$		
		$7\overline{)46}$
	$\frac{5}{8}$	
	$\frac{65}{10}$	
		$12\overline{)6}$
$4 \div 12 = \frac{1}{3}$		

6

Division

Fill in the ? with the proper numeral or word phrase.

1. $56 \div 1 = ?$
2. $1\overline{)52}^{?}$
3. $23 \div 23 = ?$
4. $\frac{96}{0} = ?$
5. $\frac{24}{24} = ?$
6. $81\overline{)81}^{?}$
7. $\frac{59}{0} = ?$
8. $73 \div 1 = ?$
9. $0\overline{)78}^{?}$
10. $\frac{37}{1} = ?$
11. $\frac{0}{8} = ?$
12. $0 \div 12 = ?$

Division

Fill in the ? with the proper numeral or word phrase.

1. $\frac{22}{22} = ?$

2. $38 \div 38 = ?$

3. $\frac{65}{0} = ?$

4. $1\overline{)55}^{?}$

5. $54 \div 0 = ?$

6. $63\overline{)63}^{?}$

7. $\frac{23}{1} = ?$

8. $0\overline{)42}^{?}$

9. $60 \div 1 = ?$

10. $\frac{75}{0} = ?$

Name:_____ Date:_____

DIVISION CONCEPTS

What is the relationship between multiplication and division? _____

_____

What is the relationship between subtraction and division? _____

_____

What is the difference between sharing fairly and making equal groups?

_____

_____

_____

Divide. Write the remainder as a fraction.

55 ÷ 9 = 110 ÷ 9 = 37 ÷ 7 =

135 ÷ 12 = 84 ÷ 9 = 35 ÷ 4 =

$7\overline{)30}$ $11\overline{)95}$ $8\overline{)45}$

$12\overline{)98}$ $6\overline{)69}$ $5\overline{)49}$

Dividing with Multiples of 10

1. Box the non-zero digits. Divide the number fact you know.
2. Cross out the zeroes using "dance partners"
3. The remaining zeroes are written in the answer.
4. Check!

72,000 ÷ 800 = 90

Check: 800 x 90 = 72,000

4,200,000 ÷ 60 = _____

Check:

12,100 ÷ 110 = _____

Check:

400,000 ÷ _____ = 8,000

Check:

56,000 ÷ _____ = 700

Check:

5,250 ÷ 5 = _____ 6,360 ÷ 6 = _____

82,400 ÷ 400 _____ 3,270 ÷ 30 = _____

1,290 ÷ 30 = _____

Name _____ Date _____

Homework 5.1

10

Divide by Multiples of 10, 100, and 1,000

Look for Patterns When Dividing by Multiples of 10, 100, and 1,000

Find	Find	Estimate
$36 \div 4 = 9$	$335{,}000 \div 1 = 335{,}000$	$18{,}000 \div 500$
$360 \div 4 = 90$	$335{,}000 \div 10 = 33{,}500$	$15 \div 5 = 3$
$3{,}600 \div 4 = 900$	$335{,}000 \div 100 = 3{,}350$	$15{,}000 \div 500 = 30$
$36{,}000 \div 4 = 9{,}000$	$335{,}000 \div 1{,}000 = 335$	$20 \div 5 = 4$
		$20{,}000 \div 500 = 40$
		The quotient is between 30 and 40.

Divide. Use Mental Math.

1. $810 \div 9$ _____
2. $480 \div 60$ _____
3. $6{,}300 \div 900$ _____
4. $4{,}500 \div 500$ _____
5. $56{,}000 \div 700$ _____
6. $40{,}000 \div 8{,}000$ _____
7. $210{,}000 \div 3{,}000$ _____
8. $540{,}000 \div 9{,}000$ _____
9. $800\overline{)24{,}000}$
10. $3{,}000\overline{)180{,}000}$
11. $600\overline{)300{,}000}$
12. $9{,}000\overline{)360{,}000}$

Problem Solving

Show Your Work

16. In Middletown, there is one principal for every 500 students. Middletown School District has 4,000 students. How many principals are there?

_____

Name:_____ Date:_____

Mental Math!! Write the quotients ONLY!

4,800÷10 =

370÷10 =

10,500÷100 =

49,000÷1,000 =

7,800÷100 =

98,400÷10 =

23,000÷1000 =

70,300÷100 =

640÷20 =

2,400÷40 =

63,000÷900 =

104,000÷100 =

Name: _____

-Math- Dividing with zeroes 12

I. $340 \div 10 =$

$3400 \div 10 =$

$34,000 \div 100 =$

$34,000 \div 1,000 =$

II. $770 \div 10 =$

$770,000 \div 100 =$

$77,000 \div 10 =$

$7,700 \div 100 =$

III. $640 \div 8 =$

$6,400 \div 80 =$

$64,000 \div 80 =$

$640,000 \div 800 =$

IV. $\frac{560}{7} =$

$\frac{5,600}{700} =$

$\frac{56,000}{70} =$

$\frac{560,000}{700} =$

V. $9\overline{)270}$

$90\overline{)2,700}$

$900\overline{)27,000}$

$9\overline{)270,000}$

$90\overline{)270,000}$

VI. $40\overline{)3,600}$

$4\overline{)36,000}$

$400\overline{)36,000}$

$40\overline{)360}$

$400\overline{)360,000}$

Estimating Quotients

192 ÷ 9

180 ÷ 9 = 20

Think of MULTIPLES of the divisor (9) and round the dividend to that multiple. All remaining digits become zero.

412 ÷ 6

Multiples of the Divisor (6): 6, 12, 18, 24, 30, 36, 42, 48

420 ÷ 6 = 70

Practice:

516 ÷ 7=

31,654 ÷ 8=

264 ÷ 32

270 ÷ 30 = 9

- ROUND the DIVISOR to the largest place value
- Find the CLOSEST MULTIPLE to the new divisor.
- Divide and add zeroes

Practice:

818 ÷ 76=

131,628 ÷ 27=

2,951 ÷ 41=

~ Estimation ~

Example: Estimate $325 \div 8$

325 is close to 320 and I know that I can divide 320 by 8.

$320 \div 8 = \boxed{40}$

Estimate:

① $548 \div 5$

② $627 \div 9$

③ $731 \div 12$

④ $275 \div 7$

⑤ $316 \div 6$

⑥ $824 \div 13$

⑦ $185 \div 4$

⑧ $218 \div 3$

Name _____ Date _____

Practice 4.1

15

Estimate Quotients

Estimate the quotient.

1. $6\overline{)193}$ _____

2. $5\overline{)439}$ _____

3. $9\overline{)3,621}$ _____

4. $7\overline{)4,310}$ _____

5. $8\overline{)78,452}$ _____

6. $5\overline{)22,801}$ _____

7. $5\overline{)266,113}$ _____

8. $7\overline{)442,597}$ _____

9. $322 \div 6$ _____

10. $507 \div 4$ _____

11. $6,828 \div 9$ _____

12. $3,412 \div 5$ _____

13. $12,461 \div 7$ _____

14. $65,135 \div 8$ _____

15. $588,117 \div 6$ _____

16. $528,117 \div 9$ _____

Test Prep

17. Luanne had 239 crafts to arrange as evenly as she could on 8 display tables. Which of these is a reasonable estimate of the number of crafts she put on each table?

A 3 crafts

B 30 crafts

C 300 crafts

D 3,000 crafts

18. Jodie had 178 crafts to arrange on 8 display tables. Estimate how many she should put on each table to arrange them as evenly as possible. Tell what numbers you used for the dividend and the divisor.

_____

Name:_____ Date:_____

Estimating Quotients
HOMEWORK

Divide.

336÷8 =

2,389÷42 =

62,895÷74 =

5,178÷58 =

412÷52 =

7,439÷89 =

821÷93 =

158÷77 =

265÷43 =

684÷81 =

9,175÷87 =

358÷37 =

Remainders in Division

(Use the 4 step problem solving method)

3 options:

1. *Ignore it/Drop it*

- the remainder is NOT NECESSARY in the answer OR it can't be used in the answer.

Sarah has $50 to buy CDs. Each CD costs $7. How many CDs can Sarah buy?

1. Let x = the number of CDs Sarah bought.
2. Div. $50 \div 7 = x$
3. $50 \div 7 = 7\ 1/7$
4. Sarah can buy 7 CDs.

You **drop** the remainder because you cannot buy 1/7 of a CD OR you cannot afford 8 CDs.

2. *Keep the remainder*

- the remainder is necessary for your answer to be correct.

Sean spent $60 on candy. He bought 8 boxes to give as gifts. How much did each box of candy cost?

1. Let x = the cost per box of candy.
2. Div. $60 \div 8 = x$
3. $60 \div 8 = 7\ ½ = \$7.50$

** *When working with money, make sure you turn the remaining fraction into cents.* **

4. Each box of candy costs $7.50.

The remainder must **be kept** in the answer because it represents the exact amount of each box.

3. *Round the remainder*

- the fractional part that is leftover must be rounded up to a whole number.

The 5th grade students are going on a trip to Medieval Times. Buses need to be reserved for 84 students and 12 adults. Each bus holds 25 people. How many buses will be needed?

1. Let x = the number of buses needed
2. Add & Div. $(84 + 12) \div 25 = x$

$84 + 12 = 96$

$96 \div 25 = 3\ 21/25$

4. There needs to be 4 buses.

You **round** the remainder up so all the people can have a seat for the trip.

Remainders in Division

Drop/Ignore it	Keep it	Round up
• "full" or "whole" • You have something/object you can't break into fractional parts • Remainder is not needed in your final answer.	• Usually deals with money $$ • You can break whatever it is into fractional parts. • Exact amount is given- no more, no less.	• You have something/ object that you can't break into fractional parts • You need the remaining parts (numerator in the fraction) in your answer.
Examples: *Mrs. Smith put books into boxes. She had 32 books. Each box held 5 books. How many full boxes did she pack?*	*Example:* *Sean spent $9 on dog bones. He bought 6 bones. How much did each bone cost?*	*Example:* *90 people went on a bus to the park. Each bus held 25 people. How many buses did they need to order?*

Division Problems/Interpreting Remainders

Use the Four Step Problem Solving Method.

1. Mr. Lou is setting up benches for the kindergarten play. Each bench can seat 7 people. 66 people are expected to attend. How many benches does he need to set up?

What do you do about the remainder?

Keep it Drop It Round up

Why?

---

2. Team membership for the local soccer league is $50. The team is scheduled to play 8 games during the season. What is the cost per game?

What do you do about the remainder? Why?

---

3. Rebecca and her three sisters bought their mother a shirt for her birthday. It cost $42, which included the tax. How much did each sister have to contribute towards the gift?

What do you do about the remainder? Why?

---

4. Mary is excited to go to FYE to buy some DVDs. They are having a great sale where all DVDs are selling for $9 each. How many DVDs can she buy with $30?

What do you do about the remainder? Why?

---

5. The fifth grade teachers are organizing the buses for our class trip to Medieval Times. 110 students, teachers, and class parents will be attending the trip. How many buses should be reserved if each bus can seat 12 people?

What do you do about the remainder? Why?

_____

6. How many times will I need to put the yardstick down if I need to measure 16 feet?

What do you do about the remainder? Why?

_____

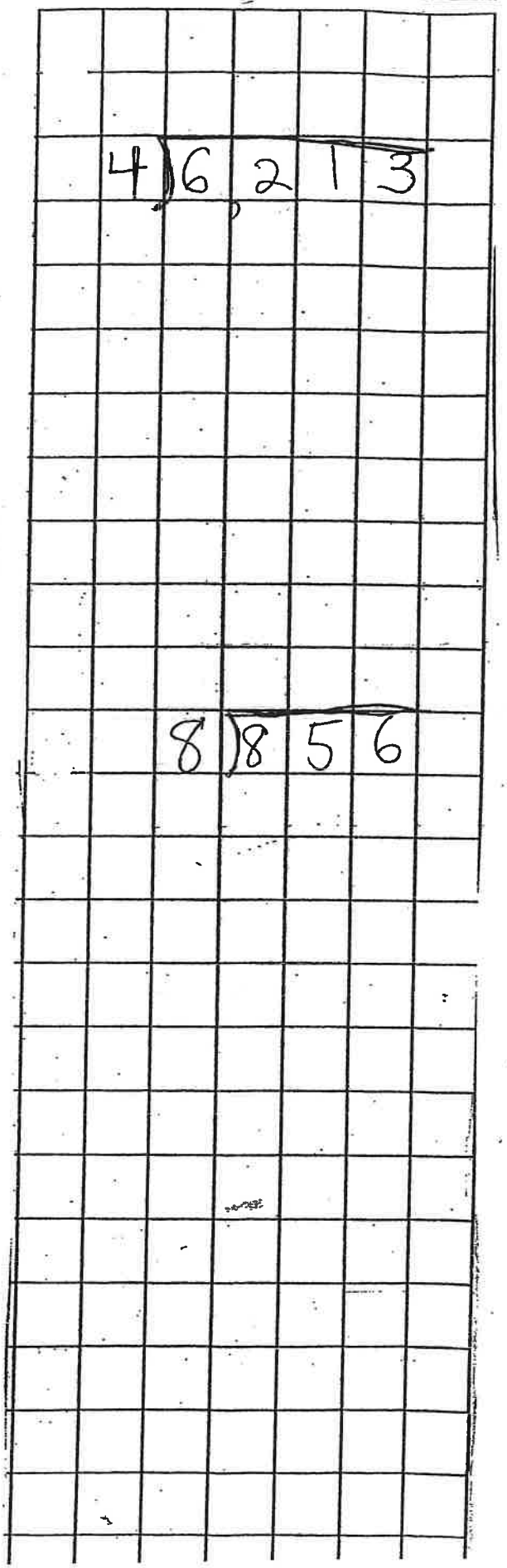
Exit ticket

Pg 2

Estimate

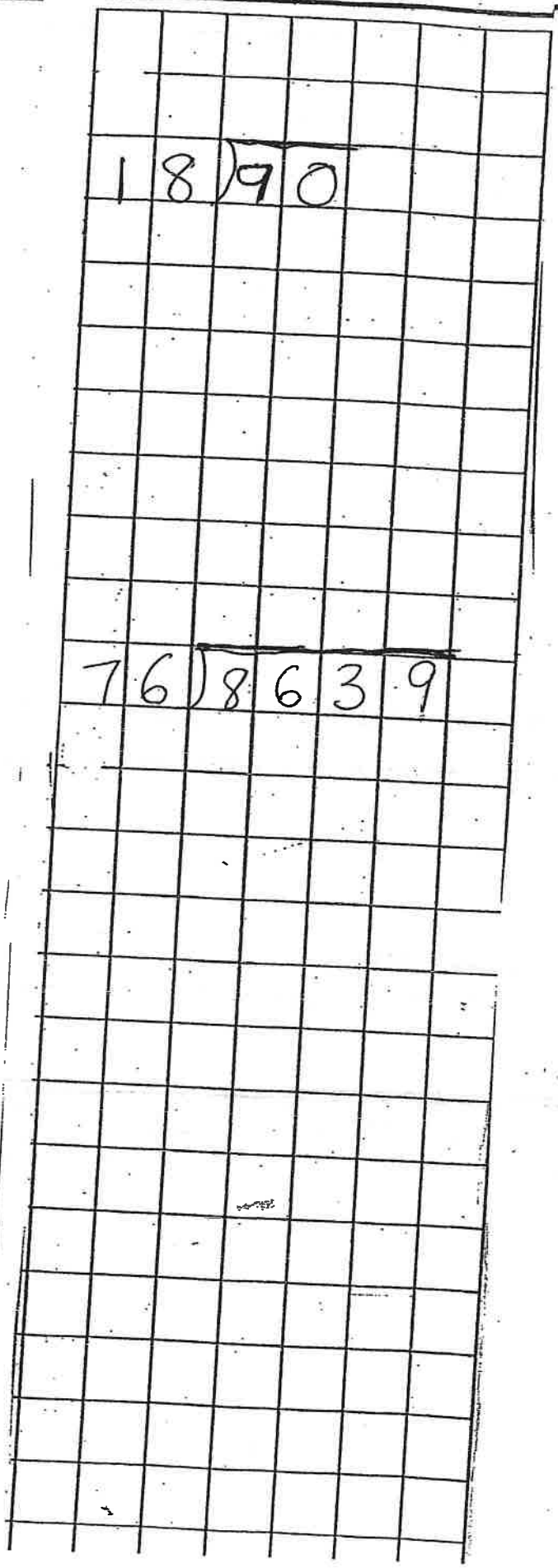
Divide

Check



Exit ticket

Estimate Divide Check 23



24

ESTIMATE FIRST, then compute. Use the TRADITIONAL METHOD OF DIVISION to calculate the answers to the following problems.

$18\overline{)70}$

$17\overline{)95}$

$13\overline{)87}$

$16\overline{)82}$

$14\overline{)91}$

$15\overline{)92}$

Name:_____ Date:_____

TRADITIONAL METHOD HOMEWORK

EXAMPLE: Traditional Method

$$
\begin{array}{r}
2649 \\
3\overline{)7947} \\
-6 \\
\hline
19 \\
-18 \\
\hline
14 \\
-12 \\
\hline
27 \\
-27 \\
\hline
0
\end{array}
$$

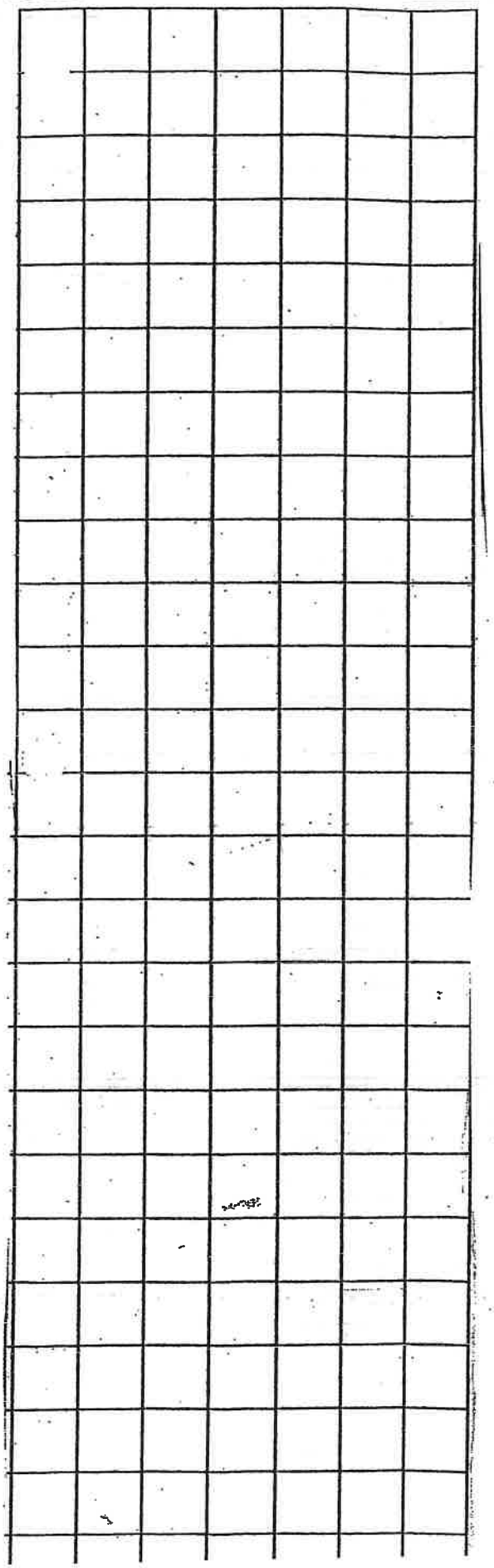
$54\overline{)3947}$

$15\overline{)4504}$

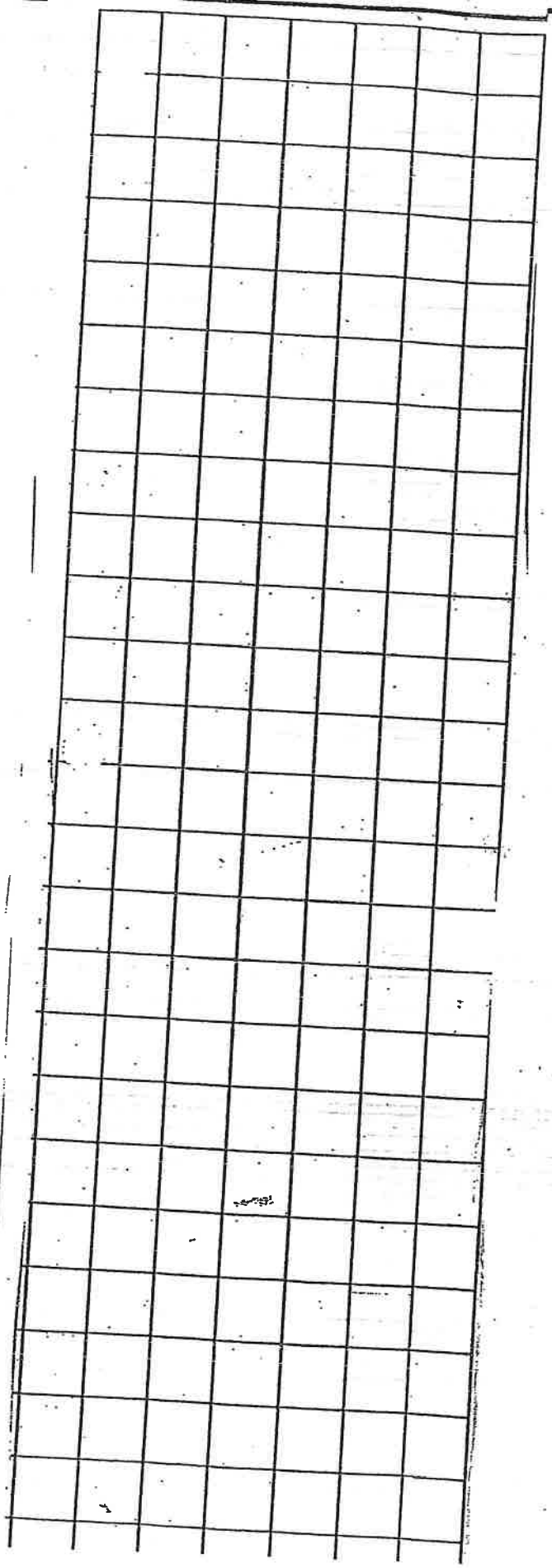
$83\overline{)974}$

$76\overline{)8639}$

Estimate | Divide | Check



Estimate Divide Check



$36\overline{)8793}$

$28\overline{)6038}$

$57\overline{)284}$

$17\overline{)6938}$

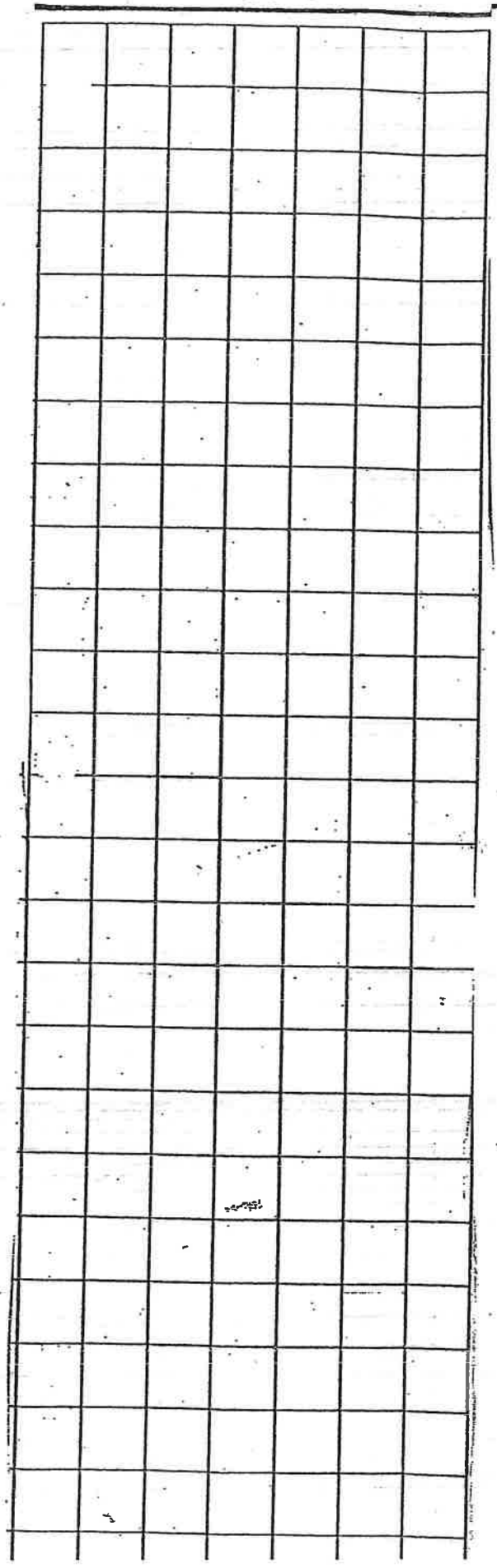
$61\overline{)7269}$

$49\overline{)592}$

$25\overline{)769}$

$11\overline{)7638}$

sti mate | Divide | Check



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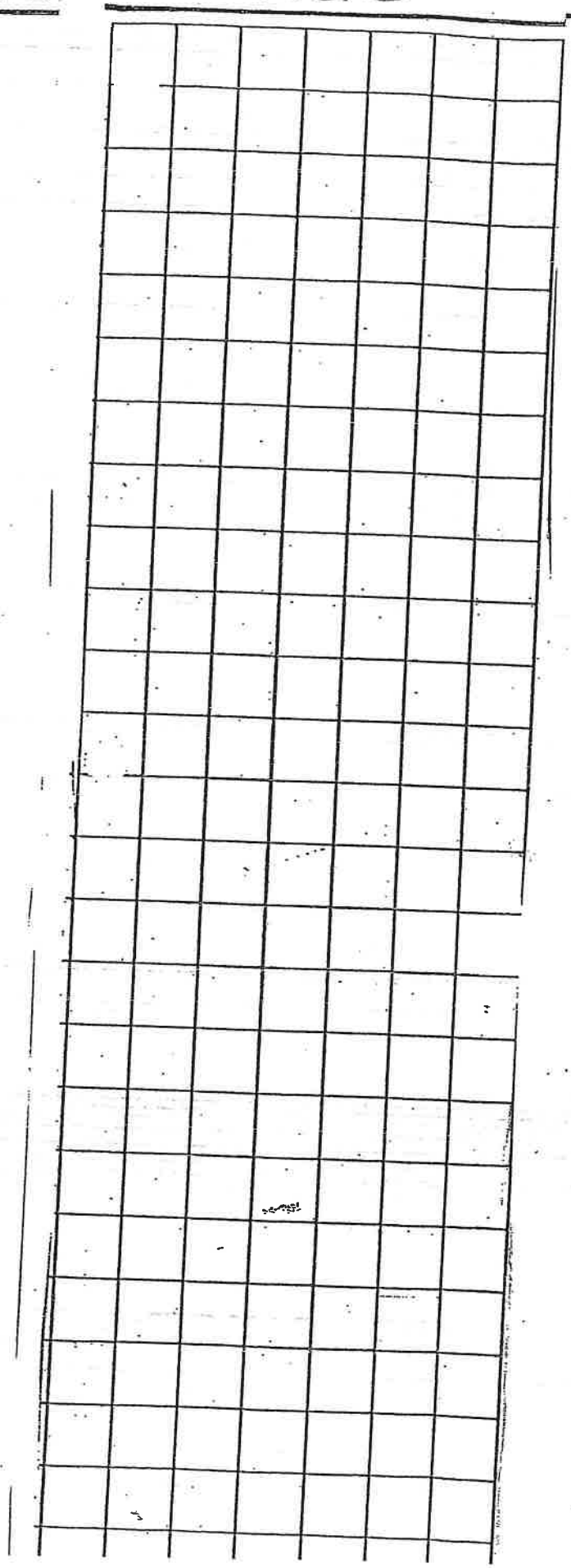


Zero in the Quotient

Use the TRADITIONAL METHOD OF DIVISION to calculate the answers to the following problems. ESTIMATE FIRST, then compute.

$45\overline{)4725}$

$8\overline{)8109}$

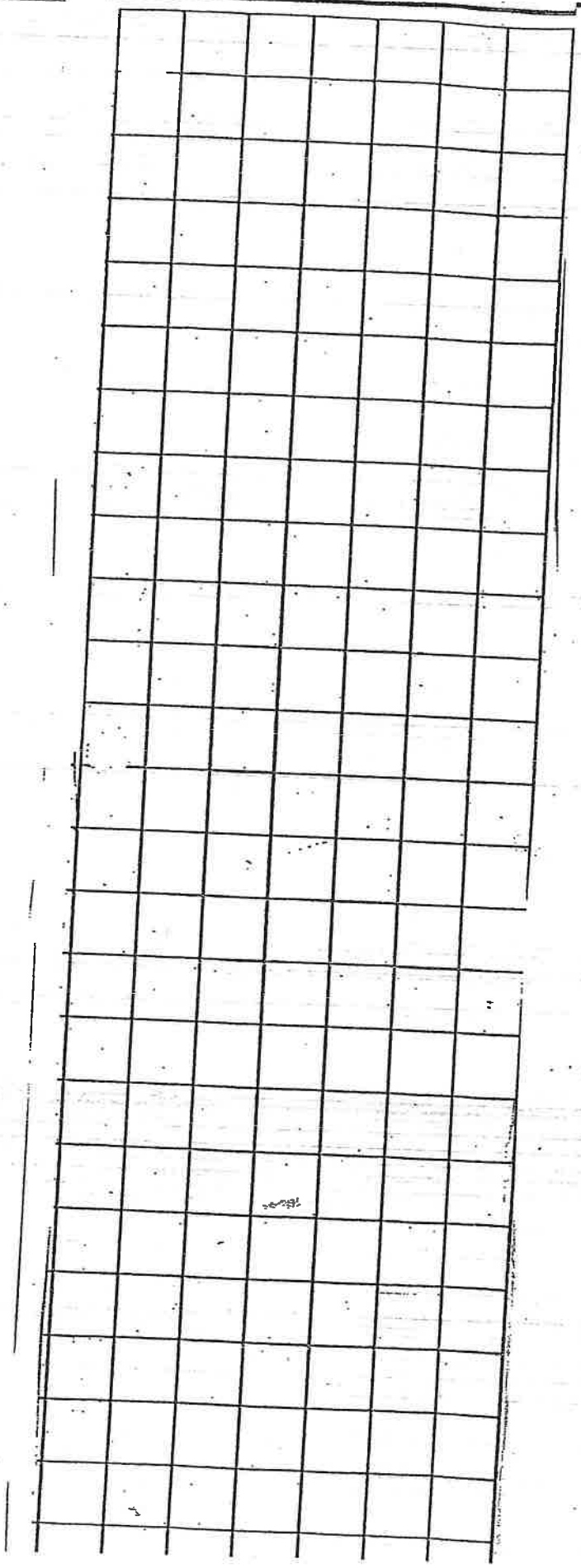
$4\overline{)2416}$

$39\overline{)8015}$

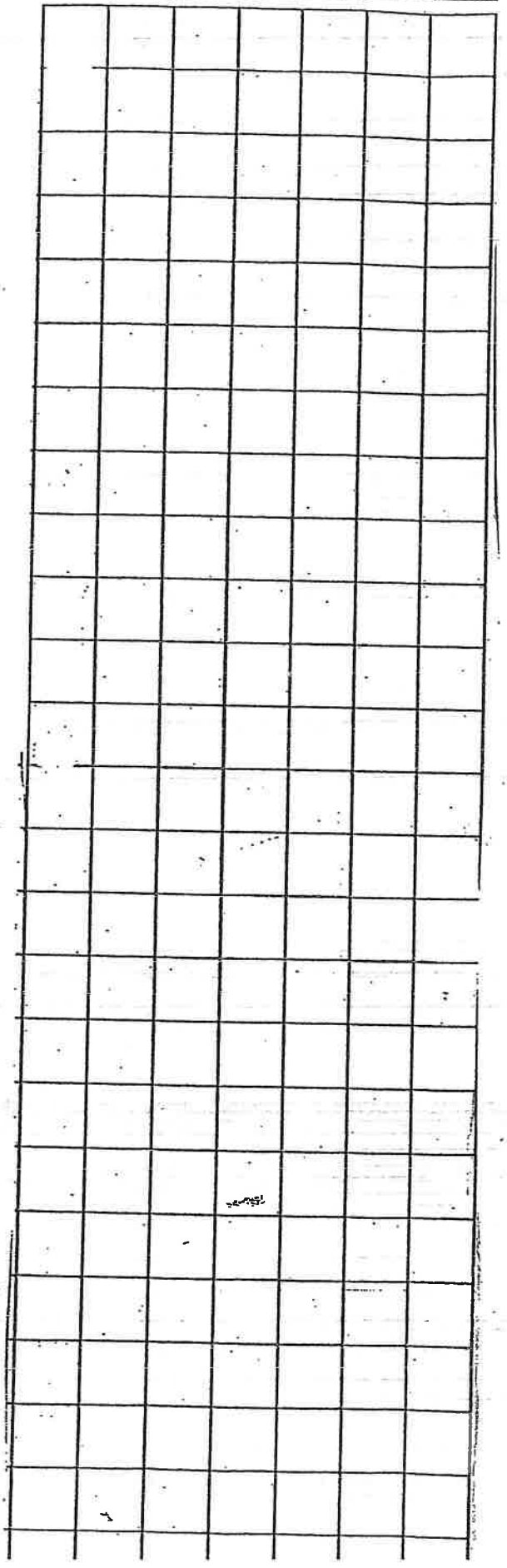
$67\overline{)7833}$

$5\overline{)1005}$

stimate Divide Check



Estimate | Divide | Check



Short Cut Division

- Use when you have ONE digit divisor ONLY; the size of the dividend does not matter.
- The process where you divide and record the remainders horizontally.
- Multiplication and subtraction steps are done mentally. The remainder is written as a subscript and placed before the next digit.

Short Division

ESTIMATE FIRST, then compute. Use the SHORT METHOD OF DIVISION to calculate the answers to the following problems.

$6\overline{)72}$ $8\overline{)92}$

$9\overline{)108}$ $7\overline{)895}$

$5\overline{)5460}$ $3\overline{)3025}$

$4\overline{)3249}$ $2\overline{)2106}$

30

$2\overline{)1087}$

$9\overline{)1127}$

$6\overline{)6257}$

$8\overline{)6754}$

$7\overline{)9835}$

$9\overline{)5686}$

$8\overline{)9874}$

$4\overline{)3987}$

Name:_____ Date:_____

DIVISION METHODS HOMEWORK

Divide using the Short Cut method.

$6\overline{)6837}$

$4\overline{)98}$

$9\overline{)4374}$

$5\overline{)730}$

Divide using the Traditional Method.

$6\overline{)5823}$

$8\overline{)99}$

Divide using the SHORT CUT METHOD.

$4\overline{)674}$

$3\overline{)5283}$

$2\overline{)7638}$

$8\overline{)79}$

Divide

$56\overline{)8724}$

$23\overline{)572}$

$9\overline{)6783}$

$4\overline{)528}$

$47\overline{)8327}$

$5\overline{)69}$

Name _____ Date _____

Solve the following problems. Be sure to state what to do with the remainder. Solve using the 4-step method.

1. David and his 6 friends shared 491 baseball cards. How many cards did each friend get? What do you do with the remainder? Why?

2. Jon and 7 friends bought a Valentine's gift for Jon's mom. The gift cost $140 including tax. How much did each have to pay for the gift? What do you do with the remainder? Why?

3. There were 350 cars washed during the day at the car wash. Fifteen attendants were on hand to wash the cars. How many cars did each attendant wash? What does the remainder represent? What do you do with it? Why?

Word Problems

Solve the following word problems using the 4 Step Problem Solving Plan.

1. Mrs. Barbag is packing cupcakes for her niece's birthday party. She has made 205 cupcakes. She can put 24 cupcakes in each box. How many boxes does she need to pack all of the cupcakes?

2. Mr. Diegnan bought 4 books for $2.95 each and a board game for $15.95. He paid with a $50.00 bill. How much change did he get?

3. Mrs. Picolli is packing up books in the library. She has 431 books to pack. The boxes each hold 36 books. After she boxes up as many books as she can, how many books will she have left over?

4. For eight days the track team ran 16 laps. If there were 52 students on the track team, how many laps did the students run in all?

5. The bookstore sold 4,491 magazines from January through the end of September. If the same amount of magazines were sold each month, how many magazines were sold during April?

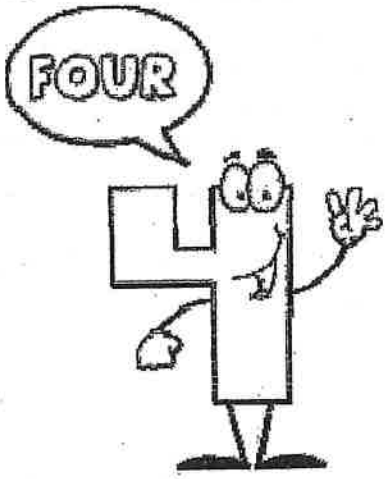
6. Twenty-seven famous authors visit the bookstore each year. If a total of 9,369 books were signed by authors last year, about how many books did each author sign?

7. Each day the customers in the bookstore read a total of 6,048 pages. There are 48 regular customers every day who go to the bookstore to have a cup of coffee and read. If each regular customer reads the same number of pages each day, how many pages does one regular customer read per day?

8. The bookstore receives 2,014 new books each month. If the same amount is received each month for 1 year, about how many books will be received in all?

Name _____ Date _____ 38

4-Step Order of Operations- Step-by-Step Lesson



Find the end value of the problem.

$$7 + 4 \times (4 + 1) \div 5 - 4$$

Explanation: We need to be reminded about the order in which attack a problem like this. The acronym PEMDAS indicates the order.

We process calculations in this order:

Parentheses, Exponents, (Multiplication, Division), Addition, and Subtraction

Note the parentheses around multiplication and division. That is because those operations are at the same level. When deciding to divide or multiply on a step, we process the calculation to the left first. Division and multiplication is processed left to right.

Step a : $7 + 4 \times (4 + 1) \div 5 - 4$	$= 7 + 4 \times 5 \div 5 - 4$	**Parentheses**
Step b : $7 + 4 \times 5 \div 5 - 4$	$= 7 + 20 \div 5 - 4$	**Multiplication (Left)**
Step c : $7 + 20 \div 5 - 4$	$= 7 + 4 - 4$	**Division**
Step d : $7 + 4 - 4$	$= 11 - 4$	**Addition**
Step e: 11-4	$= 7$	**Subtraction**

Name _____ Date _____

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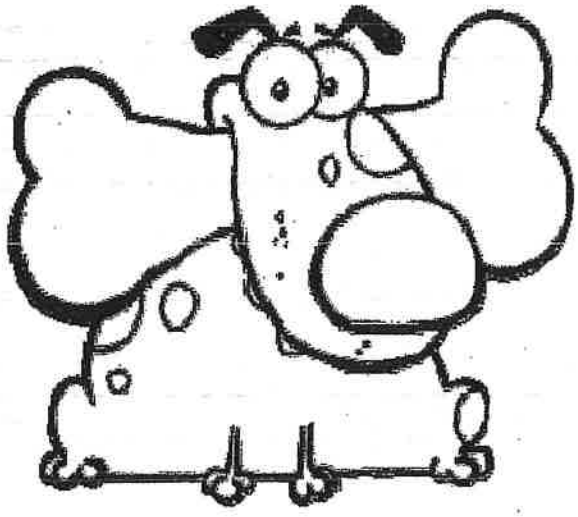
4-Step Order of Operations- Guided Lesson

Complete the following problems:



1) 10 - 12 ÷ (8 - 4) x 5 + 7

2) 5 + 8 × (4+5) ÷ 4- 3

3) 20 - 15 ÷ (8 - 3) x 4 + 10

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4-Step Order of Operations- Independent Practice Worksheet

Complete all the problems.

1. 8 + 5 x (7 + 8) ÷ 3 - 4

2. 5 + 11 x (4 + 5) ÷ 3 - 1

3. 9 + 9 x (2 + 4) ÷ 3 - 2

4. 8 + 6 x (3 + 3) ÷ 3 - 7

5. 17 + 7 x (2 + 4) ÷ 2 - 10

6. 45 – 8 ÷ (4 - 2) x 9 + 10

7. 28 - 15 ÷ (8 - 3) x 8 + 6

8. 22 - 28 ÷ (14 - 7) x 5 + 9

9. 42 - 49 ÷ (21 - 14) x 5 + 6

10. 55 - 64 ÷ (16 - 8) x 6 + 9

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4-Step Order of Operations - Matching Worksheet

Write the letter of the answer that matches the answer to each problem.

_____	1. $18 + 9 \times (5 + 4) \div 3 - 5$	a. 60
_____	2. $21 + 7 \times (4 + 4) \div 4 - 10$	b. 18
_____	3. $15 + 21 \times (2 + 2) \div 12 - 13$	c. 25
_____	4. $24 + 11 \times (3 + 5) \div 2 - 21$	d. 16
_____	5. $31 + 35 \times (3 + 3) \div 21 - 7$	e. 47
_____	6. $30 - 32 \div (6 - 2) \times 3 + 12$	f. 40
_____	7. $150 - 72 \div (24 - 16) \times 15 + 7$	g. 34
_____	8. $60 - 84 \div (36 - 24) \times 8 + 12$	h. 22
_____	9. $40 - 100 \div (50 - 30) \times 4 + 40$	i. 84
_____	10. $85 - 20 \div (30 - 20) \times 8 + 15$	j. 9

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Name : _____ Score : _____

Teacher : _____ Date : _____

Order of Operations

1) 10 ÷ 5 - 3 + 14

2) 2 x 11 + 12 - 1

3) 15 + 16 - 14 ÷ 7

4) 24 ÷ 6 + 15 x 14

5) 5 x 15 + 5 - 1

6) 10 ÷ 2 + 18 x 4

7) 14 x 12 ÷ 6 - 3

8) 5 - 20 ÷ 2 x 18

9) 14 ÷ 2 + 4 x 14

10) 5 + 10 ÷ 5 x 14

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Name : _____ Score : _____

Teacher : _____ Date : _____

Order of Operations

1) (9 - 3) + 10 ÷ 2

2) (21 - 5) x 9 - 5

3) 2 x 12 x (10 - 10)

4) (12 + 2) x 13 - 5

5) (8 +47 - 5) ÷ 5

6) (14 +34) ÷(26 - 2)

7) (10 +40) ÷(31 - 6)

8) 10 x 6 x (9-6 ~~6 - 9~~)

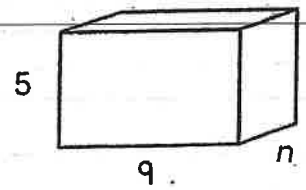
9) (11 +55 - 6) ÷ 6

10) (13 + 5) + 20 ÷10

Name_____

5.MD.5, 5.MD.5b

Volume = $l \times w \times h$



$5 \times 9 \times n = 90$

$45 \times n = 90$

What, when multiplied by 45, equals 90?

$n = 2$

Complete the table with the missing measurements.

	Length	Width	Height	Volume
1.	4 inches	12 inches		48 cubic inches
2.	6 feet		3 feet	36 cubic feet
3.		9 centimeters	2 centimeters	54 cubic centimeters
4.	2 meters	2 meters	2 meters	
5.	4 inches		3 inches	84 cubic inches
6.	3 yards	6 yards		36 cubic yards
7.	9 inches	7 inches	7 inches	
8.		13 centimeters	4 centimeters	416 cubic centimeters
9.	3 feet		8 feet	192 cubic feet
10.	6 millimeters	5 millimeters	9 millimeters	

☐ I can use formulas to find the volume of rectangular prisms.

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Name _____

5.MD.5c

You can find the volume of more complex figures using addition.

First, split the shape into two rectangular prisms.

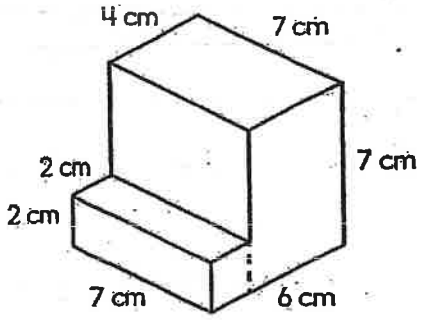
Then, find the volume of each prism.

$2 \text{ cm} \times 2 \text{ cm} \times 7 \text{ cm} = 28 \text{ cubic cm}$

$4 \text{ cm} \times 7 \text{ cm} \times 7 \text{ cm} = 196 \text{ cubic cm}$

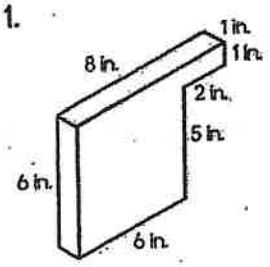
Finally, add the two volumes together.

$28 \text{ cubic cm} + 196 \text{ cubic cm} = 224 \text{ cubic cm}$



Find the volume of each figure.

1.



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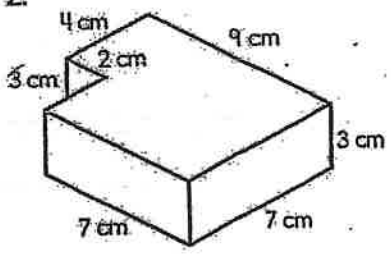

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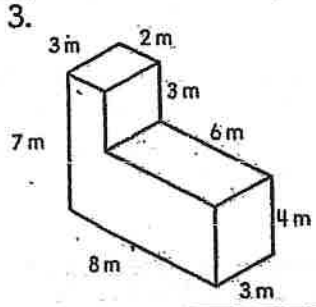

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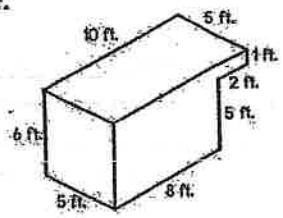

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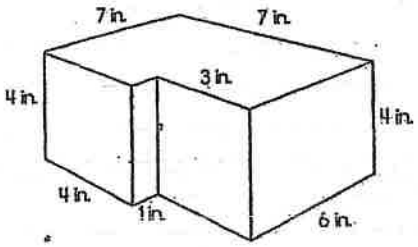

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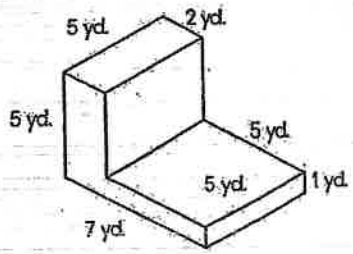


- [ ] I understand that volume can be added.
- [ ] I can find the volume of complex rectangular prisms.

Solve the following problems.

1. Volume = 84 $cm.^3$
   Height = 4 cm
   Length = 3 cm
   Value of the width?

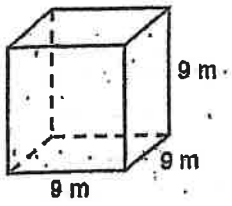
2. Volume = 72 $ft.^3$
   Height = 2 ft.
   Width = 9 ft.
   Value of the Length = ???

3. Joe's toolbox is 20 inches long, 12 inches wide, and 10 inches high. Find the volume of the toolbox.

4. The volume of a crate is 288 cubic feet. If the width is 4 feet and the height is 8 feet, how high is the crate?

5. A cube has a height of 7 inches. What is the volume of the cube?

6. A rectangular box has a height of 6 inches, a width of 10 inches, and a length of 11 inches. What is the volume of the box?

3. 

What is special about the length, width, and height in this example? What is the name of this three-dimensional figure?

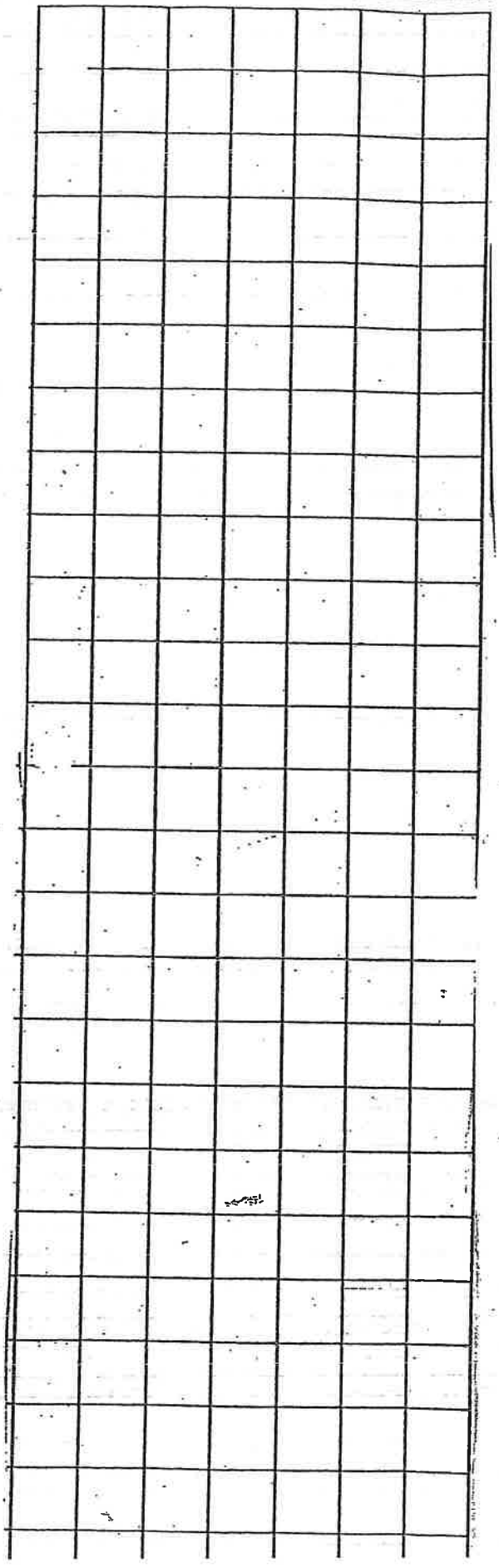
4. A rectangular solid has a volume of 36 cubic inches ($in.^3$). If the length is 3 inches, what are possible combinations of values for the width and the height of the figure?

5. A rectangular solid has a volume of 60 cubic feet ($ft.^3$). If the width is 4 feet, what are possible combinations of values for the height and the length of the figure?

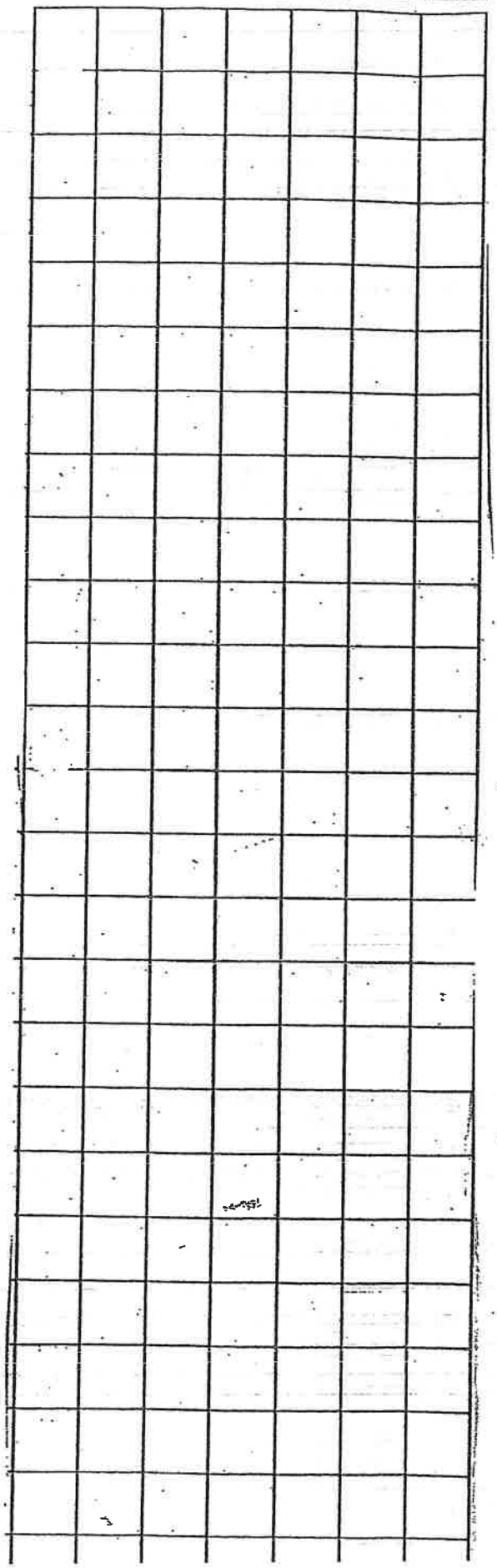
7. Bill has a rectangular prism completely filled with 132 unit cubes. What are possible values for the length, width and height of the rectangular prism? Explain your thinking.

8. Pam has a rectangular prism completely filled with 108 unit cubes. What are possible values for the length, width and height of the rectangular prism? Explain your thinking.

Estimate | Divide | Check



Estimate | Divide | Check



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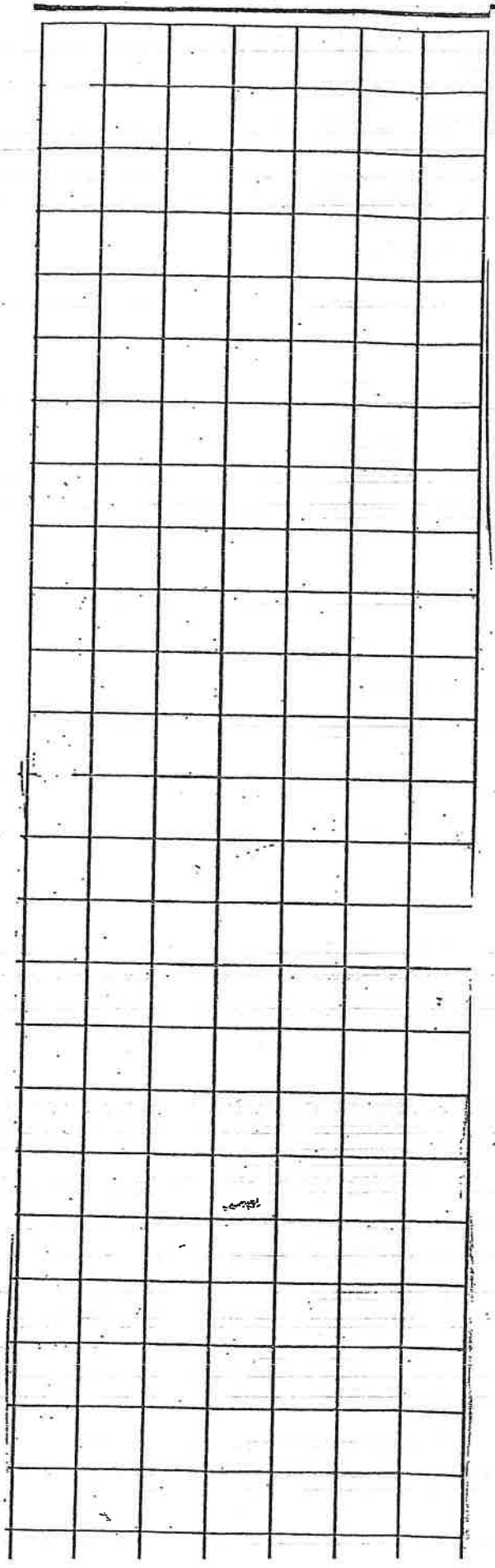

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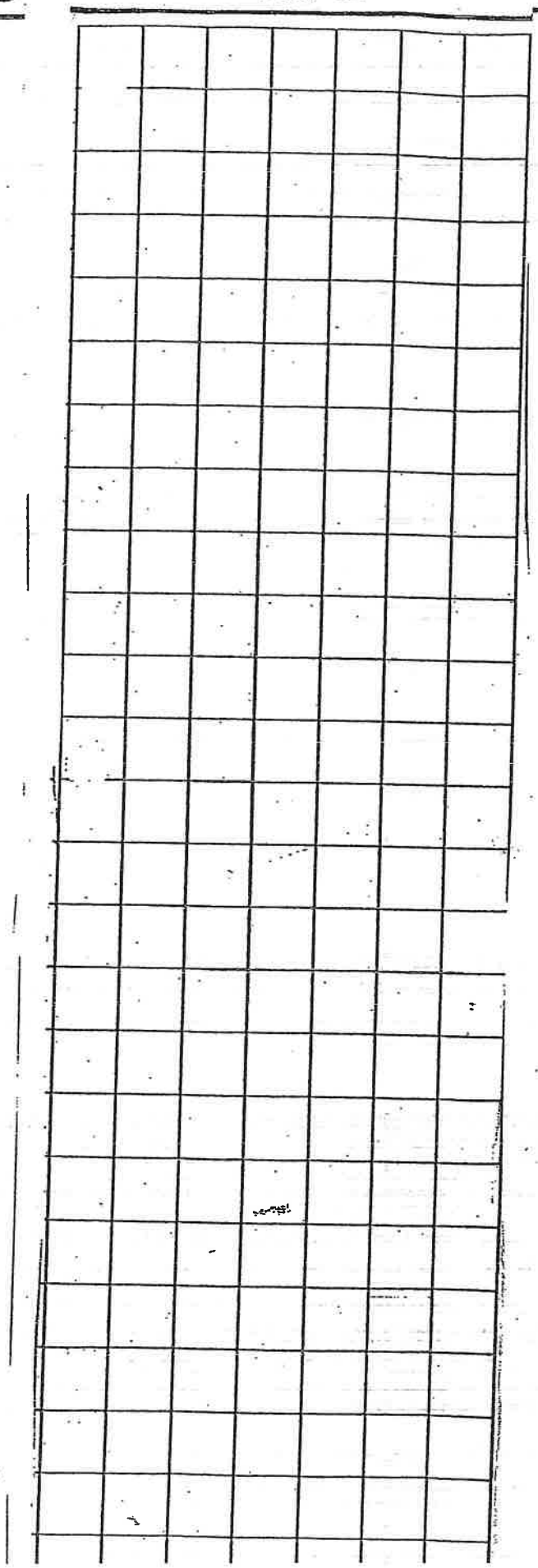

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