

Unit 4: Division Study Guide

Read each questions carefully! Be sure to answer ALL parts of the question. Don't forget the units! Show your work.

Some answers in both traditional long division & partial quotients. Use what works best for you!

1) Solve $1,855 \div 6$

$\begin{array}{r} \overset{0\ 3\ 0\ 9}{6}\overline{)1\ 8\ 5\ 5} \\ -0 \\ \hline 1\ 8 \\ -1\ 8 \\ \hline 0\ 5 \\ -0 \\ \hline 5\ 5 \\ -4\ 4 \\ \hline 1 \end{array}$	$\begin{array}{r} 6\overline{)1\ 8\ 5\ 5} \\ -1\ 2\ 0\ 0 \\ \hline 6\ 5\ 5 \\ -6\ 0\ 0 \\ \hline 5\ 5 \\ -5\ 4 \\ \hline 1 \end{array}$	$200 \times 6 = 1200$
		$100 \times 6 = 600$
		$9 \times 6 = 54$
		309

309 r1

2) Check your answer to #1

$\begin{array}{r} \overset{5}{3\ 0\ 9} \\ \times 6 \\ \hline 1\ 8\ 5\ 4 \\ + 1 \\ \hline 1\ 8\ 5\ 5 \end{array}$	$6 \times 9 = 54$
	$6 \times 0 = 0 + 5 = 5$
	$6 \times 3 = 18$

3) Estimate to solve $501 \div 7 = 490 \div 7 = 70$

4) Estimate to solve $671 \div 8 = 80$ or 90

$640 \div 8 = 80$

or

$720 \div 8 = 90$

5) Solve $8 \overline{) \$1,032}$

$\begin{array}{r} \overset{0\ 1\ 2\ 9}{8}\overline{) \$1\ 0\ 3\ 2} \\ -0 \\ \hline 1\ 0 \\ -8 \\ \hline 2\ 3 \\ -1\ 6 \\ \hline 7\ 2 \\ -7\ 2 \\ \hline 0 \end{array}$	$\begin{array}{r} 8\overline{) \$1\ 0\ 3\ 2} \\ -8\ 0\ 0 \\ \hline 2\ 3\ 2 \\ -8\ 0 \\ \hline 1\ 5\ 2 \\ -8\ 0 \\ \hline 7\ 2 \\ -7\ 2 \\ \hline 0 \end{array}$	$100 \times 8 = 800$
		$10 \times 8 = 80$
		$10 \times 8 = 80$
		$9 \times 8 = 72$
		129

\$ 129

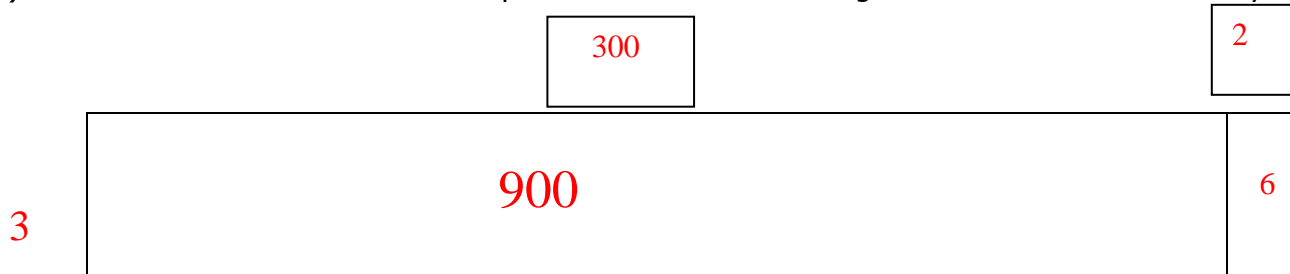
6) Check your answer to #5

$\begin{array}{r} \overset{1\ 7}{1\ 2\ 9} \\ \times 8 \\ \hline 1\ 0\ 3\ 2 \end{array}$	$8 \times 9 = 72$
	$8 \times 2 = 16 + 7 = 23$
	$8 \times 1 = 8 + 2 = 10$

7) Solve: $6 \times 4 - 2 \times (18 \div 6) + 1 = 19$

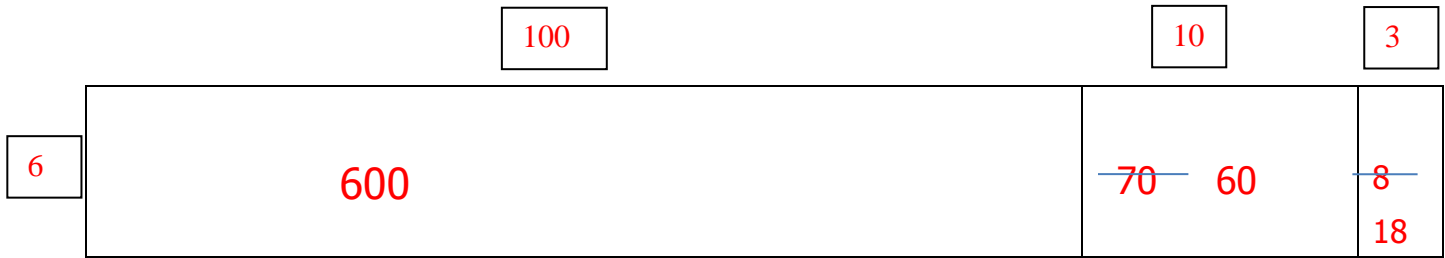
8) Solve: $29 - (24 \div 3) + 7 = 28$

9) Draw an area model of the division problem $906 \div 3$. A rectangle has been drawn below for you to use.



$300 + 2 = 302 \quad 906 \div 3 = 302$

10) Draw an area model of the division problem $678 \div 6$ to find the quotient. A rectangle has been drawn below for you to use.



$100 + 10 + 3 = 113 \quad 678 \div 6 = 113$

11) Find the quotient $9,000 \div 300 =$

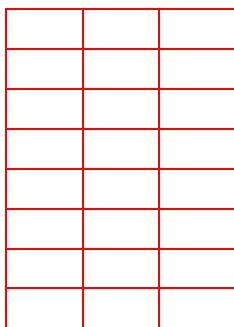
$9,000 \div 300 \rightarrow 9 \div 3 = 3$
therefore

$9,000 \div 300 = 30$

12) How many book shelves are needed if you have to store 457 books and only 8 books fit on each shelf? **58 shelves**

$$\begin{array}{r} 057 \text{ r}1 \\ 8 \overline{) 457} \\ \underline{-0} \\ 45 \\ \underline{-40} \\ 57 \\ \underline{-56} \\ 1 \end{array}$$

13) The lunchroom has a total of 24 tables. That is 8 times the number of tables in each row. Draw an array that illustrates this division fact.



24 total tables, 8 rows

Therefore there are 3 columns

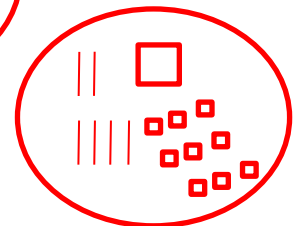
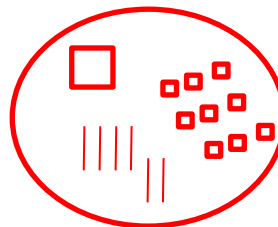
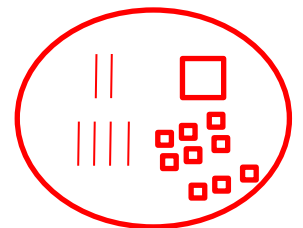
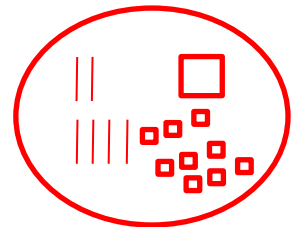
**$24 \div 8 = 3$
Similar arrays are acceptable.**

14) Model $679 \div 4 = 169 \text{ r} 3$

Answers will vary

One of the most simplest will be use of base-10

3 left over



15) Complete

- a. $42 \div 7 = 6$
- b. $420 \div 7 = 60$
- c. $4,200 \div 7 = 600$
- d. $42,000,000 \div 7 = 6,000,000$

16) Suwanee has 4 times as many residents as Buford. Suwanee has 6,892 residents. Write an equation using S for Suwanee and B for Buford that represents this situation.

$$S = 4 \times B \quad \text{or} \quad S \div 4 = B$$

$$B \times 4 = S$$

About how many residents are in Buford?

$$6892 \rightarrow 7000 \div 4 = 1,750$$

About 1,750 residents in Buford

Or something similar

17) Find the missing factor.

$$8 \times \underline{529} = 4,232$$

$$4232 \div 8 =$$

$\begin{array}{r} 8 \overline{) 4232} \\ \underline{-800} \\ 3432 \\ \underline{-3200} \\ 232 \\ \underline{-160} \\ 72 \\ \underline{-72} \\ 0 \end{array}$	$\begin{array}{l} 100 \times 8 = 800 \\ 400 \times 8 = 3200 \\ 20 \times 8 = 160 \\ 9 \times 8 = 72 \end{array}$
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$$\begin{array}{r} \oplus \quad 0 \ 5 \ 2 \ 9 \\ 8 \overline{) 4 \ 2 \ 3 \ 2} \\ \underline{-0} \\ 4 \ 2 \\ \underline{-4 \ 0} \\ 2 \ 3 \\ \underline{-1 \ 6} \\ 7 \ 2 \\ \underline{-7 \ 2} \\ 0 \end{array}$$

18) Which of the following have quotients that are less than 6?

a. $24 \div 8 = 3$

c. $35 \div 5 = 7$

b. $54 \div 6 = 9$

d. $10 \div 2 = 5$

19) $1,113 \div 8 = 139 \text{ r}1$ is the inverse (opposite) of

$$139 \times 8 + 1 = 1,113$$

20) Write an equation that shows 9 times as many as 6 is 54.

$$9 \times 6 = 54$$

21) Solve $(12 \times 4) \div 6 + 33 = 41$

22) Solve $12 \times 8 \div (2 + 1) = 32$

23) Write all of the composite numbers between 70 and 75.

72, 74

24) Write all of the prime numbers between 65 and 70.

67

25) A teacher has \$225 to spend on a class party. Each student will cost \$9. Will she have enough to pay for her 27 students? Explain why or why not.

Lots of ways to solve it ; this is only one way

$$\$ 9 \times 27 = \$243$$

No, the teacher needs \$243 to pay for all her students, but she only has \$ 225 to spend

26) Mason placed his 142 Pokémon cards in sleeves that hold only 8 cards each. How many sleeves will he need for all of the cards? Model the answer.

$$142 \div 8 = 17 \text{ r } 6$$

$$\begin{array}{r} 0 \ 1 \ 7 \ \text{r} \ 6 \\ 8 \overline{) 1 \ 4 \ 2} \\ \underline{-0} \\ 1 \ 4 \\ \underline{-8} \\ 6 \ 2 \\ \underline{-5 \ 6} \\ 6 \end{array}$$

Mason needs 18 sleeves because he has 6 left over cards that he needs 1 extra sleeve.

Your model should be 17 groups of 8 with 6 leftover.

27) Mrs. Nowicki's fourth grade team won a cupcake party at the local bakery. Ms. Nowicki has 42 students and 3 chaperones, and only 12 people will fit into each school van. How many vans will Mrs. Nowicki need? Explain your answer.

$$42 \text{ students} + 3 \text{ chaperones} = 45 \text{ people}$$

$$45 \div 12 = 3 \text{ r } 9 \rightarrow \text{We need 4 vans.}$$

28) A. List the factors of 38.

$$\underline{\hspace{2cm}}$$

1, 2, 19, 38

B. List the first 4 multiples of 12.

$$\underline{\hspace{2cm}}$$

12, 24, 36, 48

29) A baker packages 245 brownies in packages of 12. If he gets to eat all of the left over brownies, how many brownies will he get to eat?

$$245 \div 12 = 20 \text{ r } 5$$

The baker gets to eat the 5 remaining brownies.

30) There are 329 people in a theater. Each person will get a program. If the programs come in packages of 20, how many packages will they need in order for everyone to get a program?

$$329 \div 20 = 16 \text{ r } 9$$

They need 17 packages to have enough for everyone.

31) An announcer estimates that there were 70,000 fans in the stadium. Which one number below cannot be the exact number of fans that are there?

a. 71,994

→ 70,000

b. 75,459

→ 80,000

c. 65,005

→ 70,000

d. 69,799

→ 70,000

32) A new Computer costs \$1,998. The Computer costs 6 times as much as a Tablet.

a) Use the variables C and T to write a number sentence that will help you solve this problem.

$$C \div 6 = T \text{ or } T \times 6 = C$$

b) How much does the Tablet cost?

$$\$1,998 \div 6 = \$333$$

$$\begin{array}{r} 333 \\ 6 \overline{) 1998} \\ \underline{-0} \\ -19 \\ \underline{-18} \\ 19 \\ \underline{-18} \\ 18 \\ \underline{-18} \\ 0 \end{array}$$