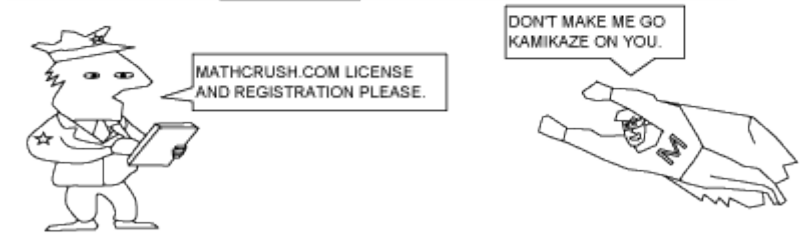


DIVISION - LEVEL 2



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HOW TO USE TABLE

X	1	2	3	4	5	6
1	1	2	3	4	5	6
2	2	4	6	8	10	12
3	3	6	9	12	15	18
4	4	8	12	16	20	24
5	5	10	15	20	25	30
6	6	12	18	24	30	36

HERE'S A PIECE OF THE MULTIPLICATION TABLE. THE DARKER TOP AND SIDE NUMBERS ARE WHAT YOU ARE MULTIPLYING. SO IF I ASKED WHAT IS 6 X 5? YOU WOULD FIND WHERE 6 AND 5 CROSS, WHICH EQUALS 30. IF YOU LOOK CLOSELY YOU WILL SEE THEY CROSS SOMEWHERE ELSE TOO.



NO PROBLEM. SO IF I WAS LOOKING FOR 4 X 3 I JUST LOOK FOR WHERE THEY CROSS, WHICH IS AT 12.



X	1	2	3	4	5
1	1	2	3	4	5
2	2	4	6	8	10
3	3	6	9	12	15
4	4	8	12	16	20
5	5	10	15	20	25
6	6	12	18	24	30
7	7	14	21	28	35



THAT'S NOT SCARY AT ALL.

REVIEW - A



BEFORE WE BEGIN, LET'S DO A QUICK REVIEW.

YOU SHOULD KNOW YOUR BASIC MULTIPLICATION AND DIVISION BY NOW.



REVIEW - A

$$3 \times 5 = 5 + 5 + 5 = 15$$

MULTIPLICATION IS A SHORTCUT FOR ADDITION.

3 X 5 = _____	11 X 6 = _____	7 X 6 = _____
7 X 3 = _____	6 X 8 = _____	8 X 9 = _____
9 X 12 = _____	9 X 9 = _____	7 X 3 = _____
11 X 13 = _____	5 X 11 = _____	12 X 9 = _____
13 X 8 = _____	6 X 13 = _____	11 X 11 = _____
5 X 13 = _____	11 X 5 = _____	9 X 4 = _____
8 X 4 = _____	10 X 0 = _____	3 X 9 = _____
0 X 13 = _____	12 X 6 = _____	12 X 13 = _____
12 X 5 = _____	11 X 7 = _____	9 X 8 = _____
4 X 4 = _____	4 X 9 = _____	4 X 7 = _____
6 X 9 = _____	3 X 13 = _____	3 X 8 = _____
1 X 13 = _____	6 X 11 = _____	7 X 9 = _____
11 X 4 = _____	8 X 10 = _____	4 X 7 = _____
4 X 11 = _____	11 X 8 = _____	9 X 6 = _____
6 X 10 = _____	0 X 4 = _____	7 X 13 = _____
8 X 3 = _____	6 X 8 = _____	10 X 11 = _____
7 X 5 = _____	3 X 13 = _____	13 X 13 = _____
3 X 8 = _____	4 X 12 = _____	12 X 11 = _____
9 X 9 = _____	2 X 10 = _____	9 X 7 = _____
12 X 6 = _____	5 X 7 = _____	7 X 8 = _____
10 X 7 = _____	8 X 8 = _____	5 X 4 = _____

LONG DIVISION

WELL, I HOPE THE REVIEW WASN'T TOO DIFFICULT. DO YOU REMEMBER THE OTHER WAYS OF SHOWING DIVISION?

THESE ALL MEAN 45 DIVIDED BY 5, WHICH EQUALS 9.



1. $45 \div 5 = 9$
2. $5 \overline{)45} = 9$
3. $\frac{45}{5} = 9$



YOU SHOULD BE VERY FAMILIAR WITH THE FIRST ONE, BUT WE NEED TO START SPENDING MORE TIME ON THE OTHER TWO.

THIS PROBLEM IS AN EXAMPLE OF LONG DIVISION. IT TELLS US THAT $81 \times 5 = 405$.

$$\begin{array}{r} \times 81 \\ 5 \overline{)405} \\ - 40 \downarrow \\ \hline 005 \\ - 5 \\ \hline 0 \end{array}$$

DO YOU SEE HOW ALL THE WORK IS SHOWN ON THE PROBLEM.



I KNOW IT LOOKS CONFUSING, BUT DON'T START PANICKING. WE'VE JUST STARTED, SO HAVE NO WORRIES.



BEFORE WE START SHOWING YOU HOW TO SOLVE THESE THE LONG WAY, QUICKLY ANSWER THE PROBLEMS BELOW.

MAKE SURE YOU START WRITING THE ANSWER ON TOP OF THE PROBLEM.

1. $\frac{\square}{11} \overline{)143}$

2. $\frac{\square}{4} \overline{)28}$

3. $\frac{\square}{8} \overline{)88}$

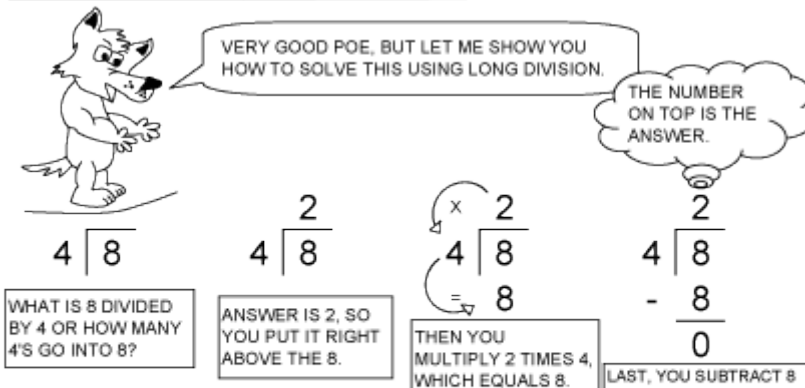
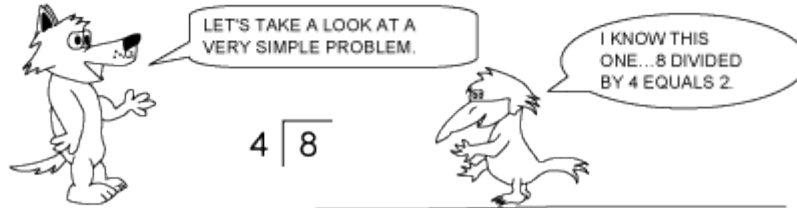
4. $\frac{\square}{5} \overline{)45}$

5. $\frac{\square}{8} \overline{)56}$

6. $\frac{\square}{10} \overline{)30}$

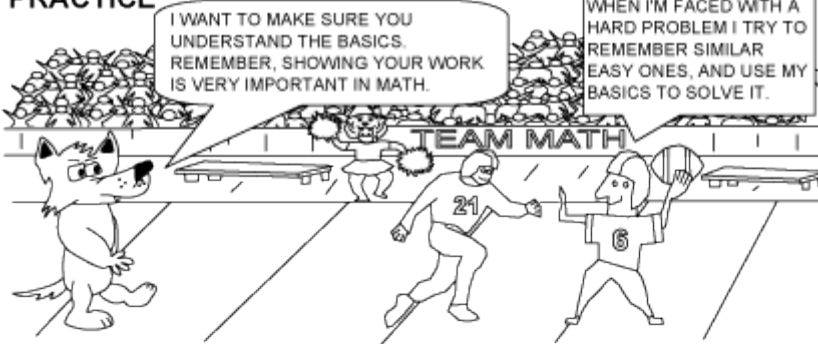


LONG DIVISION - CONTINUED




1. DIVIDE
2. MULTIPLY
3. SUBTRACT
- THERE'S A PATTERN... DIVIDE, MULTIPLY, AND SUBTRACT.

PRACTICE



HELPFUL EXAMPLE

 IN CASE YOU FORGOT, DIGITS ARE THE NUMBERS INSIDE THE ACTUAL NUMBER.

FOR EXAMPLE, 526 IS THE NUMBER. BUT 5, 2, AND 6 ARE THE DIGITS.

$$\begin{array}{r} 1 \\ 2 \overline{) 2} \\ - 2 \\ \hline 0 \end{array}$$

DIVIDE
MULTIPLY
SUBTRACT

ANSWER

1

1. $2 \overline{) 4}$

2. $4 \overline{) 8}$

3. $1 \overline{) 5}$

4. $2 \overline{) 6}$

5. $3 \overline{) 3}$

6. $2 \overline{) 8}$

7. $3 \overline{) 9}$

8. $1 \overline{) 3}$

9. $1 \overline{) 8}$

10. $3 \overline{) 6}$

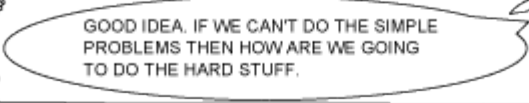
11. $4 \overline{) 4}$

12. $3 \overline{) 9}$

MATH ART



BEFORE WE START GETTING INTO THE BIGGER NUMBERS, I THOUGHT WE SHOULD PRACTICE OUR BASICS.



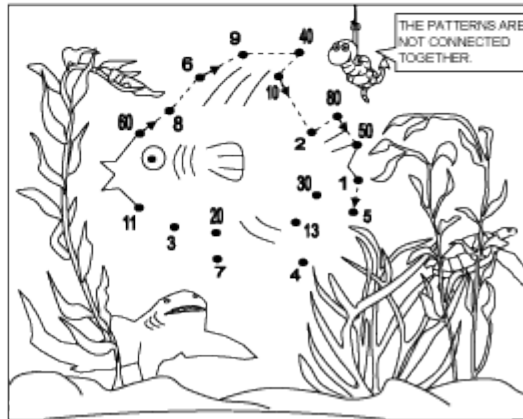
GOOD IDEA. IF WE CAN'T DO THE SIMPLE PROBLEMS THEN HOW ARE WE GOING TO DO THE HARD STUFF.



I KNOW MOST OF YOU HAVE PROBABLY DONE THESE MATH ART PAGES. IN CASE SOMEONE FORGOT OR IS NEW, HERE IS A HELPFUL EXAMPLE TO GUIDE YOU.

PATTERN #1				PATTERN #2					
360	÷	6	=	60	8	÷	8	=	_____
16	÷	2	=	8	5	÷	1	=	_____
42	÷	7	=	6	150	÷	5	=	_____
81	÷	9	=	9	78	÷	6	=	_____
160	÷	4	=	40	44	÷	11	=	_____
50	÷	5	=	10	80	÷	4	=	_____
24	÷	12	=	2	63	÷	9	=	_____
640	÷	8	=	80	12	÷	4	=	_____
300	÷	6	=	50	77	÷	7	=	_____
LINE ENDS				LINE ENDS					

FIRST, I ANSWERED THE PROBLEMS IN PATTERN #1. THEN I CONNECTED THE DOTS IN THE ORDER THEY WERE IN. NOW YOU TRY PATTERN #2.



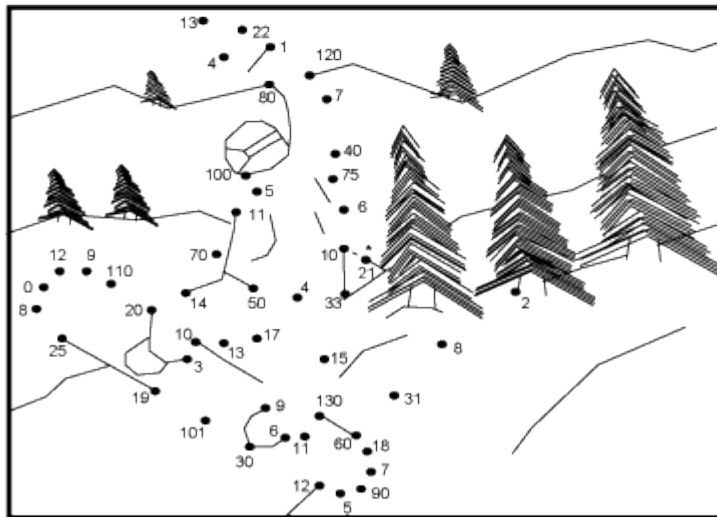
SO IN PATTERN #2, 8 DIVIDED BY 8 EQUALS 1 AND 5 DIVIDED BY 1 EQUALS 5. THEN I WOULD CONNECT THOSE TWO DOTS TOGETHER.

DIRECTIONS:

NAME: _____

ANSWER THE PROBLEMS BELOW AND CONNECT THE DOTS IN THE ORDER YOU CREATED.
 I STARTED THE PATTERN FOR YOU...NOW YOU DO THE REST. BE CAREFUL SOME NUMBERS REPEAT.
 NOTE: PATTERNS ARE NOT CONNECTED TOGETHER.

PATTERN #1	PATTERN #2	PATTERN #3	PATTERN #4
42 ÷ 2 = <u>21</u>	600 ÷ 6 = _____	250 ÷ 5 = _____	14 ÷ 7 = _____
50 ÷ 5 = <u>10</u>	40 ÷ 8 = _____	36 ÷ 9 = _____	88 ÷ 11 = _____
66 ÷ 11 = _____	88 ÷ 8 = _____	99 ÷ 3 = _____	62 ÷ 2 = _____
150 ÷ 2 = _____	210 ÷ 3 = _____	30 ÷ 2 = _____	180 ÷ 3 = _____
160 ÷ 4 = _____	28 ÷ 2 = _____	390 ÷ 3 = _____	36 ÷ 2 = _____
63 ÷ 9 = _____	80 ÷ 4 = _____	99 ÷ 9 = _____	56 ÷ 8 = _____
720 ÷ 6 = _____	550 ÷ 5 = _____	36 ÷ 6 = _____	360 ÷ 4 = _____
32 ÷ 32 = _____	90 ÷ 10 = _____	99 ÷ 11 = _____	60 ÷ 12 = _____
44 ÷ 2 = _____	132 ÷ 11 = _____	34 ÷ 2 = _____	144 ÷ 12 = _____
156 ÷ 12 = _____	0 ÷ 17 = _____	91 ÷ 7 = _____	270 ÷ 9 = _____
52 ÷ 13 = _____	104 ÷ 13 = _____	80 ÷ 8 = _____	202 ÷ 2 = _____
560 ÷ 7 = _____	50 ÷ 2 = _____	39 ÷ 13 = _____	38 ÷ 2 = _____
LINE ENDS	LINE ENDS	LINE ENDS	LINE ENDS



LONG DIVISION - BIG NUMBERS



$$3 \overline{)78}$$

FIRST I COVER UP ALL THE NUMBERS INSIDE EXCEPT THE FIRST ONE.

NOW I ASK MYSELF HOW MANY 3'S CAN GO INTO 7? 2.

THEN I MULTIPLY THE TOP NUMBER BY 3 (2 X 3 = 6).

NEXT I SUBTRACT THE 7 BY 6 (7 - 6 = 1).

NOW I UNCOVER THE NEXT NUMBER.

SINCE NOTHING IS HOLDING UP THE 8, HE FALLS DOWN NEXT TO THE 1.

HELP I'M FALLING

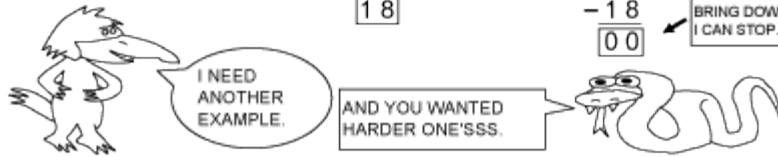
NOW I START OVER AGAIN. I NEED TO FIGURE OUT HOW MANY 3'S GO INTO 18? 6.

THEN I MULTIPLY THE NEW TOP NUMBER BY 3 (6 X 3 = 18).

LAST, I SUBTRACT THE 18 BY 18 (18 - 18 = 0).

ANSWER IS 26 OR 3 X 26 = 78.

THERE ARE NO MORE DIGITS TO BRING DOWN SO I CAN STOP.



PRACTICE - A



GIVE THESE A TRY AND REMEMBER THE PATTERN:
 1. DIVIDE
 2. MULTIPLY
 3. SUBTRACT
 4. BRING DOWN

I JUST NOTICED SOMETHING... ALL THE DIGITS (NUMBERS) INSIDE HAVE A DIGIT ABOVE IT.

HELPFUL EXAMPLE

THE CLOSES YOU CAN COME TO 7 WITHOUT GOING OVER IS $3 \times 2 = 6$.

$$\begin{array}{r} \times 37 \\ 2 \overline{) 74} \\ \underline{-6} \\ 14 \\ \underline{-14} \\ 00 \end{array}$$

2 GOES PERFECTLY INTO 14, BECAUSE $7 \times 2 = 14$.

ANOTHER WAY TO LOOK AT IT

$$37 \times 2 = 74$$



1. $\begin{array}{r} \\ 3 \overline{) 81} \end{array}$ 2. $\begin{array}{r} \\ 5 \overline{) 95} \end{array}$ 3. $\begin{array}{r} \\ 4 \overline{) 92} \end{array}$ 4. $\begin{array}{r} \\ 2 \overline{) 54} \end{array}$

5. $\begin{array}{r} \\ 2 \overline{) 78} \end{array}$ 6. $\begin{array}{r} \\ 6 \overline{) 96} \end{array}$ 7. $\begin{array}{r} \\ 5 \overline{) 80} \end{array}$ 8. $\begin{array}{r} \\ 3 \overline{) 90} \end{array}$

3 GOES INTO 9, BUT THE 0 IS TOO SMALL. WHEN THIS HAPPENS PUT A 0 ON TOP.

$3 \times 3 = 9$, BUT $3 \times 30 = 90$
 SEE WHY YOU NEED A 0?

PRACTICE - C

1. $\begin{array}{r} \square \square \\ 7 \overline{) 98} \end{array}$

2. $4 \overline{) 68}$

3. $2 \overline{) 48}$

4. $5 \overline{) 75}$

5. $6 \overline{) 84}$

6. $3 \overline{) 81}$

7. $2 \overline{) 74}$

8. $6 \overline{) 78}$

9. $4 \overline{) 96}$

10. $5 \overline{) 85}$

11. $2 \overline{) 92}$

12. $3 \overline{) 93}$

13. $4 \overline{) 72}$

14. $3 \overline{) 87}$

15. $2 \overline{) 56}$

REMAINDERS



SO MAX, WHAT DO WE DO IF THE NUMBER DOES NOT DIVIDE PERFECTLY INTO THE OTHER NUMBER?

GOOD QUESTION, POE. WHEN THAT HAPPENS WE ACTUALLY HAVE A FEW CHOICES, BUT LET'S LEARN THE EASY WAY FOR NOW. THE EASY WAY IS CALLED A REMAINDER.



A REMAINDER? I WILL ASSUME THAT IS THE SAME THING AS SOMETHING THAT REMAINS OR IS LEFT BEHIND.

EXACTLY. A REMAINDER IS WHAT IS LEFT OVER WHEN YOU DIVIDE. THINK OF IT LIKE CHANGE WHEN YOU BUY FOOD.



THAT'S SIMPLE ENOUGH, BUT WHY DON'T YOU SHOW US AN EXAMPLE.

NO PROBLEM. JUST REMEMBER YOU DIVIDE THE SAME WAY AS BEFORE.



$$3 \overline{) 97} \rightarrow 3 \overline{) \begin{array}{|c|} \hline 3 \\ \hline 9 \\ \hline \end{array}} \rightarrow 3 \overline{) \begin{array}{|c|} \hline 3 \\ \hline 9 \\ \hline 9 \\ \hline \end{array}} \rightarrow 3 \overline{) \begin{array}{|c|} \hline 3 \\ \hline 9 \\ \hline 9 \\ \hline 0 \\ \hline \end{array}}$$

$$\begin{array}{r} 3 \\ 3 \overline{) 97} \\ - 9 \\ \hline 07 \end{array} \rightarrow \begin{array}{r} 3 \ 2 \\ 3 \overline{) 97} \\ - 9 \\ \hline 07 \end{array} \rightarrow \begin{array}{r} 3 \ 2 \\ 3 \overline{) 97} \\ - 9 \\ \hline 07 \\ 6 \\ \hline 1 \end{array} \rightarrow \begin{array}{r} 3 \ 2 \\ 3 \overline{) 97} \\ - 9 \\ \hline 07 \\ 6 \\ \hline 1 \end{array}$$



NOW DO YOU SEE THE ONE? THERE ARE NO MORE DIGITS TO BRING DOWN SO WE CAN STOP. WE CALL THE ONE A REMAINDER.

ANSWER
32 R 1

"R" MEANS REMAINDER.

PRACTICE - B

HELPFUL EXAMPLE

ON THIS PROBLEM, EVERY TIME YOU SUBTRACT THE ANSWER HAS TO BE SMALLER THAN THE 2. DO YOU KNOW WHY?

THIS DIVISION PROBLEM IS ASKING HOW MANY 2'S CAN FIT INTO 97.

$$\begin{array}{r} 48 \text{ R } 1 \\ 2 \overline{) 97} \\ \underline{- 8} \\ 17 \\ \underline{- 16} \\ 1 \end{array}$$

1. $2 \overline{) 67}$ 2. $4 \overline{) 95}$ 3. $7 \overline{) 99}$ 4. $3 \overline{) 73}$

5. $4 \overline{) 86}$ 6. $2 \overline{) 77}$ 7. $3 \overline{) 83}$ 8. $6 \overline{) 91}$

9. $2 \overline{) 59}$ 10. $4 \overline{) 63}$ 11. $2 \overline{) 91}$ 12. $3 \overline{) 82}$

13. $5 \overline{) 78}$ 14. $7 \overline{) 87}$ 15. $3 \overline{) 59}$ 16. $2 \overline{) 75}$

REWRITING DIVISION

HEY MAX, THIS LONG DIVISION STUFF IS PRETTY EASY, BUT WHAT DO WE DO IF THE PROBLEM IS WRITTEN ONE OF THE OTHER WAYS?

DO YOU MEAN LIKE THIS?

1. $42 \div 6 = 7$
 2. $\frac{42}{6} = 7$

YES, BUT HOW WOULD WE SOLVE THEM IF THEY WERE BIGGER?

REMEMBER, POE, THEY ALL MEAN THE SAME THING... 42 DIVIDED BY 6 EQUALS 7. SO WE CAN WRITE THE PROBLEM EITHER OF THE THREE WAYS.

I KIND OF SEE WHAT YOU MEAN, BUT CAN YOU SHOW US AN EXAMPLE?

LET'S START WITH THE FIRST WAY. IF YOU HAVE A PROBLEM LIKE THIS YOU CAN REWRITE IT SO IT LOOKS LIKE A LONG DIVISION PROBLEM.

THEN WE CAN SOLVE IT LIKE BEFORE.

$72 \div 4 = 4 \overline{) 72}$

$\begin{array}{r} \times 1 \\ 4 \overline{) 72} \\ \underline{-4} \\ 32 \end{array} \Rightarrow \begin{array}{r} 1 \\ 4 \overline{) 72} \\ \underline{-4} \\ 32 \end{array} \Rightarrow \begin{array}{r} 1 \\ 4 \overline{) 72} \\ \underline{-4} \\ 32 \end{array} \Rightarrow \begin{array}{r} \times 18 \\ 4 \overline{) 72} \\ \underline{-4} \\ 32 \\ \underline{-32} \\ 00 \end{array} \Rightarrow \begin{array}{r} 18 \\ 4 \overline{) 72} \\ \underline{-4} \\ 32 \\ \underline{-32} \\ 00 \end{array}$

YOU HAVE TO BE CAREFUL REWRITING THESE. I MEAN LOOK HOW THE 72 AND 4 SWITCH. I GUESS PRACTICE WILL HELP US ALONG.

PRACTICE

HELPFUL EXAMPLE



I COULD DO THIS ALL DAY LONG. THEY JUST FALL OVER LIKE DOMINOS. NOW YOU TRY...JUST REMEMBER TO KNOCK THEM OVER AND THEN DIVIDE.

$\frac{86}{2}$ $2 \overline{)86}$ \Rightarrow $2 \overline{)86}$ \Rightarrow $2 \overline{)86}$ \Rightarrow $\begin{array}{r} 43 \\ 2 \overline{)86} \\ \underline{-86} \\ 06 \\ \underline{-6} \\ 0 \end{array}$

1. $\frac{89}{3} = \square$ 2. $\frac{76}{4} = \square$

3. $\frac{65}{2} = \square$ 4. $\frac{97}{5} = \square$ 5. $\frac{85}{4} = \square$

6. $\frac{78}{3} = \square$ 7. $\frac{68}{4} = \square$ 8. $\frac{98}{7} = \square$

9. $\frac{75}{2} = \square$ 10. $\frac{90}{6} = \square$ 11. $\frac{57}{3} = \square$

PRACTICE - C



BEFORE WE MOVE ON, LET'S DO ONE PAGE WITH ALL THREE TYPES OF DIVISION AND A MATH ART PAGE.

$$594 \div 4 = 4 \overline{)594}$$

$$\frac{289}{3} = 3 \overline{)289}$$

HERE ARE A COUPLE OF EXAMPLES TO HELP YOU ALONG.



1. $432 \div 5 =$

2. $814 \div 3 =$

3. $\frac{315}{2} =$

4. $\frac{241}{5} =$

5. $570 \div 3 =$

6. $675 \div 9 =$

7. $\frac{724}{4} =$

8. $\frac{643}{7} =$

9. $428 \div 2 =$

10. $\frac{931}{8} =$

DIVIDING BY TWO DIGITS



WELL POE, YOU SHOULD BE FEELING PRETTY COMFORTABLE WITH DIVIDING, BUT WE NEED TO START DIVIDING BY TWO DIGITS.



THAT MEANS THE OUTSIDE NUMBER WILL BE BIGGER. WOW, THAT'S GOING TO TAKE MORE TIME TO SOLVE.



YES AND NO. FIRST I WANT TO TEACH YOU THE LONG WAY, SO YOU CAN SOLVE A PROBLEM NO MATTER WHAT. THEN I WANT TO SHOW YOU A SHORTCUT.



I SEE WHAT YOU'RE SAYING, MAX. I MEAN IT'S A GOOD IDEA TO KNOW HOW TO SOLVE A PROBLEM BEFORE LEARNING SHORTCUTS.



TAKE A LOOK AT THIS PROBLEM. JUST REMEMBER, THIS IS THE LONG WAY. IT WILL GET EASIER IN A BIT.

$$34 \overline{)952} \rightarrow 34 \overline{)952} \rightarrow 34 \overline{)952}$$

JUST LIKE BEFORE, WE NEED TO LOOK AT ONE NUMBER AT A TIME. AS YOU CAN SEE I COVERED UP THE 5 AND 2.

SINCE THE 9 IS WAY TOO SMALL I PUT A 0 ABOVE THE 9. $0 \times 34 = 0$.

THEN I BRING DOWN THE 5 AND START OVER.

$$34 \overline{)952} \rightarrow 34 \overline{)952} \rightarrow 34 \overline{)952} \rightarrow 34 \overline{)952}$$

NOW WE NEED TO FIND OUT WHAT TIMES 34 COMES CLOSE TO 95 WITHOUT GOING OVER. LET'S LIST SOME MULTIPLES OF 34.

$\begin{array}{r} 34 \\ \times 1 \\ \hline 34 \end{array}$	$\begin{array}{r} 34 \\ \times 2 \\ \hline 68 \end{array}$
--	--

WE BRING DOWN THE 2 AND FIND OUT WHAT TIMES 34 COMES CLOSE TO 272 WITHOUT GOING OVER. LET'S LIST SOME MORE MULTIPLES OF 34.

$\begin{array}{r} 1 \\ \times 34 \\ \hline 136 \end{array}$	$\begin{array}{r} 2 \\ \times 34 \\ \hline 170 \end{array}$	$\begin{array}{r} 2 \\ \times 34 \\ \hline 204 \end{array}$	$\begin{array}{r} 2 \\ \times 34 \\ \hline 238 \end{array}$	$\begin{array}{r} 3 \\ \times 34 \\ \hline 272 \end{array}$
---	---	---	---	---

TOO BIG \rightarrow $\begin{array}{r} 1 \\ \times 34 \\ \hline 102 \end{array}$

PRACTICE - B

1. $30 \overline{)971}$

2. $46 \overline{)644}$

3. $23 \overline{)885}$

4. $67 \overline{)603}$

5. $10 \overline{)899}$

6. $19 \overline{)458}$

7. $29 \overline{)742}$

8. $25 \overline{)625}$

9. $70 \overline{)613}$

10. $31 \overline{)839}$

11. $20 \overline{)956}$

12. $42 \overline{)894}$

13. $60 \overline{)857}$

14. $38 \overline{)950}$

15. $81 \overline{)382}$



DID SOME PROBLEMS TAKE LESS
TIME? DO YOU KNOW WHY?

DIVIDING BY TWO DIGITS



NOW LET'S USE OUR ESTIMATING SKILLS TO HELP US SOLVE THE SAME KIND OF DIVISION PROBLEMS.

WE'RE GOING TO DIVIDE BY TWO DIGITS, BUT THIS TIME USE ESTIMATING TO SAVE US SOME TIME.



EXACTLY, SO LET'S GET STARTED.

IT HELPS TO LOOK AT AN EASIER PROBLEM FIRST.

$$21 \overline{)91} \Rightarrow 20 \overline{)91}$$



WHEN WE SOLVED A PROBLEM LIKE THIS EARLIER, WE LISTED THE MULTIPLES OF 21.

21	21	21	21	1	21
$\times 1$	$\times 2$	$\times 3$	$\times 4$	$\times 5$	
21	42	63	84	105	

BUT INSTEAD OF WASTING TIME, ESTIMATE 21 TO AN EASIER NUMBER LIKE 20. NOW WE CAN DO THE MULTIPLES OF 20 IN OUR HEAD. IN OTHER WORDS, WE DO NOT HAVE TO LIST ALL THE MULTIPLES OF 21.

SO WE USE 20 TO HELP US FIND THE ANSWER FOR 21.



$$\begin{array}{r} 20 \quad 0 \\ 21 \overline{)91} \\ - 0 \downarrow \\ \hline 91 \end{array} \Rightarrow \begin{array}{r} 20 \quad 04 \quad R7 \\ 21 \overline{)91} \\ - 0 \\ \hline 91 \\ - 84 \\ \hline 07 \end{array}$$

VERY IMPORTANT. DO YOU SEE THAT WE'RE MULTIPLYING 21 NOT 20. WE ONLY USE 20 AS A HELPER.

CAN 20 GO INTO 9? NO, BECAUSE 9 IS TOO SMALL. WE PUT A 0 ABOVE THE 9 AND $0 \times 21 = 0$.

AFTER BRINGING DOWN THE 1, WE NOW HAVE 91. ASK YOURSELF HOW MANY 20'S CAN GO INTO 91. WELL $4 \times 20 = 80$ AND THAT'S AS CLOSE AS WE CAN GET. SO USE 4. $4 \times 21 = 84$.



NOW DON'T PANIC WE'RE JUST STARTING. CHECK OUT THE NEXT PAGE FOR ANOTHER EXAMPLE.

PRACTICE - B

1. $32 \overline{)775}$

2. $47 \overline{)563}$

3. $19 \overline{)675}$

4. $40 \overline{)972}$

5. $23 \overline{)483}$

6. $68 \overline{)283}$

7. $26 \overline{)640}$

8. $51 \overline{)746}$

9. $20 \overline{)642}$

10. $63 \overline{)714}$

11. $38 \overline{)860}$

12. $33 \overline{)705}$

I NEED A MATH
ART BREAK.

13. $80 \overline{)967}$

14. $12 \overline{)498}$

15. $59 \overline{)832}$



PRACTICE TEST



1. $96 \div 6$ 2. $\frac{73}{3}$ 3. $80 \div 4$ 4. $\frac{91}{2}$

5. $5 \overline{)895}$ 6. $4 \overline{)926}$ 7. $7 \overline{)977}$ 8. $3 \overline{)882}$

9. $40 \overline{)872}$ 10. $21 \overline{)684}$ 11. $33 \overline{)941}$

12. $57 \overline{)741}$ 13. $38 \overline{)840}$ 14. $16 \overline{)876}$

YOUR SCORE: _____ OUT OF 14 HOW YOU DID: 12-14 = \checkmark / 10-11 = \ominus / 9 OR LESS = ?

EXTRA PRACTICE - A



1. $72 \div 8 = \square$
2. $9 \times \square = 72$
3. $4 \times 8 = \square$
4. $16 \div \square = 4$
5. $\square \times 6 = 36$
6. $42 \div 7 = \square$
7. $5 \times 10 = \square$
8. $7 \times \square = 49$
9. $60 \div \square = 6$
10. $32 \div \square = 4$
11. $12 \div 3 = \square$
12. $\square \times 9 = 18$
13. $\square \div 6 = 6$
14. $13 \times \square = 78$
15. $64 \div \square = 8$
16. $13 \times \square = 169$
17. $\square \times 5 = 45$
18. $72 \div 9 = \square$
19. $\square \div 10 = 4$
20. $\square \times 12 = 96$
21. $\square \div 4 = 6$
22. $7 \div \square = 7$
23. $11 \times 11 = \square$
24. $6 \times 8 = \square$
25. $\square \times 9 = 54$
26. $54 \div \square = 6$
27. $11 \times \square = 77$
28. $65 \div \square = 5$
29. $\square \times 5 = 65$
30. $\square \div 4 = 7$
31. $18 \div 9 = \square$
32. $9 \times \square = 18$
33. $11 \times 12 = \square$
34. $\square \times 8 = 32$
35. $\square \div 12 = 7$
36. $3 \times \square = 33$
37. $48 \div \square = 8$
38. $7 \div 7 = \square$
39. $\square \times 7 = 7$

DIRECTIONS: EXTRA PRACTICE - B NAME: _____

ANSWER THE PROBLEMS BELOW AND CONNECT THE DOTS IN THE ORDER YOU CREATED.
 I STARTED THE PATTERN FOR YOU...NOW YOU DO THE REST. BE CAREFUL SOME NUMBERS REPEAT.
 NOTE: PATTERNS ARE NOT CONNECTED TOGETHER.

PATTERN #1	PATTERN #2	PATTERN #3	PATTERN #4
21 ÷ 7 = <u>3</u>	600 ÷ 3 = _____	60 ÷ 3 = _____	120 ÷ 3 = _____
280 ÷ 4 = <u>70</u>	360 ÷ 6 = _____	169 ÷ 13 = _____	38 ÷ 2 = _____
121 ÷ 11 = _____	22 ÷ 11 = _____	120 ÷ 12 = _____	36 ÷ 9 = _____
70 ÷ 7 = _____	770 ÷ 7 = _____	600 ÷ 2 = _____	480 ÷ 4 = _____
4 ÷ 2 = _____	72 ÷ 8 = _____	36 ÷ 2 = _____	450 ÷ 5 = _____
640 ÷ 8 = _____	3 ÷ 3 = _____	70 ÷ 10 = _____	56 ÷ 7 = _____
117 ÷ 13 = _____	48 ÷ 12 = _____	24 ÷ 3 = _____	33 ÷ 3 = _____
150 ÷ 10 = _____	34 ÷ 2 = _____	81 ÷ 9 = _____	143 ÷ 11 = _____
390 ÷ 3 = _____	110 ÷ 10 = _____	50 ÷ 2 = _____	36 ÷ 12 = _____
25 ÷ 5 = _____	84 ÷ 7 = _____	300 ÷ 10 = _____	28 ÷ 4 = _____
6 ÷ 2 = _____	120 ÷ 12 = _____	7 ÷ 7 = _____	100 ÷ 1 = _____
28 ÷ 2 = _____	156 ÷ 12 = _____	108 ÷ 9 = _____	200 ÷ 4 = _____
78 ÷ 13 = _____	40 ÷ 5 = _____	36 ÷ 6 = _____	132 ÷ 11 = _____
44 ÷ 4 = _____	9 ÷ 3 = _____	12 ÷ 3 = _____	26 ÷ 2 = _____
91 ÷ 13 = _____	77 ÷ 11 = _____	160 ÷ 10 = _____	12 ÷ 6 = _____
LINE ENDS	LINE ENDS	LINE ENDS	LINE ENDS

