LET'S TAKE A LOOK AT **MULTIPLES**...IF YOU DID NOT KNOW, A MULTIPLE IS THE PRODUCT OF TWO COUNTING NUMBERS.

FOR ME, AN EASIER DEFINITION IS THE WORD, *MULTIPLE*, SOUNDS LIKE MULTIPLICATION. IT'S THE ANSWER YOU GET WHEN YOU MULTIPLY.

POE'S RIGHT, IT'S ALWAYS A GOOD IDEA TO PUT DEFINITIONS IN YOUR OWN WORDS. IT MAKES MORE SENSE.

CHECK OUT THIS EXAMPLE. IF WE TOOK THE NUMBER 2 AND LISTED SOME OF ITS MULTIPLES...

M U L T I P L E S

$1 \times 2 = 2$
$2 \times 2 = 4$
$3 \times 2 = 6$
$4 \times 2 = 8$
$5 \times 2 = 10$
$6 \times 2 = 12$
$7 \times 2 = 14$
$8 \times 2 = 16$
$9 \times 2 = 18$
$10 \times 2 = 20$

AS YOU CAN SEE, WE MULTIPLIED 2 BY 1, 2, 3, 4, 5, AND SO ON. THE MULTIPLES ARE THE ANSWERS: *2, 4, 6, 8, 10, 12, 14, 16, 18,* AND *20*.

THESE ARE ONLY THE FIRST TEN MULTIPLES OF 2. A MATTER OF FACT, MULTIPLES GO FOR EVER AND EVER. THEY ARE INFINITE.

THAT'S SIMPLE ENOUGH. EVEN I CAN DO THAT...HOW ABOUT YOU?

LIST THE FIRST 10 MULTIPLES OF THE GIVEN NUMBERS BELOW.

$1 \times 3 = 3$	$1 \times 4 = 4$	$1 \times 5 = 5$	$1 \times 6 = 6$
$2 \times 3 = 6$	$2 \times 4 = 8$	$2 \times 5 = 10$	$2 \times 6 = 12$
$3 \times 3 = 9$	$3 \times 4 = 12$	$3 \times 5 = 15$	$3 \times 6 = 18$
$4 \times 3 = 12$	$4 \times 4 = 16$	$4 \times 5 = 20$	$4 \times 6 = 24$
$5 \times 3 = 15$	$5 \times 4 = 20$	$5 \times 5 = 25$	$5 \times 6 = 30$
$6 \times 3 = 18$	$6 \times 4 = 24$	$6 \times 5 = 30$	$6 \times 6 = 36$
$7 \times 3 = 21$	$7 \times 4 = 28$	$7 \times 5 = 35$	$7 \times 6 = 42$
$8 \times 3 = 24$	$8 \times 4 = 32$	$8 \times 5 = 40$	$8 \times 6 = 48$
$9 \times 3 = 27$	$9 \times 4 = 36$	$9 \times 5 = 45$	$9 \times 6 = 54$
$10 \times 3 = 30$	$10 \times 4 = 40$	$10 \times 5 = 50$	$10 \times 6 = 60$

DON'T FORGET, THE ANSWERS ARE THE MULTIPLES.

LIST THE FIRST 10 MULTIPLES FOR EACH GIVEN NUMBER.

MULTIPLES OF 9

$1 \times 9 = 9$	$6 \times 9 = 54$
$2 \times 9 = 18$	$7 \times 9 = 63$
$3 \times 9 = 27$	$8 \times 9 = 72$
$4 \times 9 = 36$	$9 \times 9 = 81$
$5 \times 9 = 45$	$10 \times 9 = 90$

SHOW YOUR WORK.

1. MULTIPLES OF 11
$1 \times 11 = 11$
$2 \times 11 = 22$
$3 \times 11 = 33$
$4 \times 11 = 44$
$5 \times 11 = 55$
$6 \times 11 = 66$
$7 \times 11 = 77$
$8 \times 11 = 88$
$9 \times 11 = 99$
$10 \times 11 = 110$

2. MULTIPLES OF 7
$1 \times 7 = 7$
$2 \times 7 = 14$
$3 \times 7 = 21$
$4 \times 7 = 28$
$5 \times 7 = 35$
$6 \times 7 = 42$
$7 \times 7 = 49$
$8 \times 7 = 56$
$9 \times 7 = 63$
$10 \times 7 = 70$

3. MULTIPLES OF 10
$1 \times 10 = 10$
$2 \times 10 = 20$
$3 \times 10 = 30$
$4 \times 10 = 40$
$5 \times 10 = 50$
$6 \times 10 = 60$
$7 \times 10 = 70$
$8 \times 10 = 80$
$9 \times 10 = 90$
$10 \times 10 = 100$

4. MULTIPLES OF 13
$1 \times 13 = 13$
$2 \times 13 = 26$
$3 \times 13 = 39$
$4 \times 13 = 52$
$5 \times 13 = 65$
$6 \times 13 = 78$
$7 \times 13 = 91$
$8 \times 13 = 104$
$9 \times 13 = 117$
$10 \times 13 = 130$

5. MULTIPLES OF 20
$1 \times 20 = 20$
$2 \times 20 = 40$
$3 \times 20 = 60$
$4 \times 20 = 80$
$5 \times 20 = 100$
$6 \times 20 = 120$
$7 \times 20 = 140$
$8 \times 20 = 160$
$9 \times 20 = 180$
$10 \times 20 = 200$

6. MULTIPLES OF 8
$1 \times 8 = 8$
$2 \times 8 = 16$
$3 \times 8 = 24$
$4 \times 8 = 32$
$5 \times 8 = 40$
$6 \times 8 = 48$
$7 \times 8 = 56$
$8 \times 8 = 64$
$9 \times 8 = 72$
$10 \times 8 = 80$

7. MULTIPLES OF 15
$1 \times 15 = 15$
$2 \times 15 = 30$
$3 \times 15 = 45$
$4 \times 15 = 60$
$5 \times 15 = 75$
$6 \times 15 = 90$
$7 \times 15 = 105$
$8 \times 15 = 120$
$9 \times 15 = 135$
$10 \times 15 = 150$

8. MULTIPLES OF 12
$1 \times 12 = 12$
$2 \times 12 = 24$
$3 \times 12 = 36$
$4 \times 12 = 48$
$5 \times 12 = 60$
$6 \times 12 = 72$
$7 \times 12 = 84$
$8 \times 12 = 96$
$9 \times 12 = 108$
$10 \times 12 = 120$

THE ANSWERS ARE THE MULTIPLES.

SOMETIMES YOU'LL NEED TO FIND A COMMON MULTIPLE OF TWO OR MORE NUMBERS. THIS IS VERY HELPFUL TO KNOW WHEN YOU'RE ADDING AND SUBTRACTING FRACTIONS WITH UNCOMMON DENOMINATORS.

THE WORD, **COMMON**, MEANS THE **SAME**. COMMON MULTIPLES ARE MULTIPLES THAT THE NUMBERS HAVE THE SAME. WHEN USING FRACTIONS THIS IS ALSO CALLED COMMON DENOMINATORS.

HERE IS AN EXAMPLE FOR YOUR EYES ONLY. DO YOU SEE THE MULTIPLES OF 4 AND 6? 4: 4, 8, 12, 16, 20, 24, 28, 32, 36,... 6: 6, 12, 18, 24, 30, 36, 42, 48, 54,... DO YOU SEE WHAT THEY HAVE IN COMMON?

THEY HAVE 12 THE SAME.

HEY, THEY ALSO HAVE 24 IN COMMON.

I BET THEY'LL HAVE 36 IN COMMON TOO.

36???

$1 \times 4 = 4$	$1 \times 6 = 6$
$2 \times 4 = 8$	$2 \times 6 = 12$
$3 \times 4 = 12$	$3 \times 6 = 18$
$4 \times 4 = 16$	$4 \times 6 = 24$
$5 \times 4 = 20$	$5 \times 6 = 30$
$6 \times 4 = 24$	$6 \times 6 = 36$
$7 \times 4 = 28$	$7 \times 6 = 42$
$8 \times 4 = 32$	$8 \times 6 = 48$

FIND THE FIRST TWO COMMON MULTIPLES FOR EACH SET OF NUMBERS.

1. 4   8
8
16

2. 12   9
36
72

3. 8   12
24
48

4. 6   10
30
60

5. 5   4
20
40

6. 11   3
33
66

7. 13   2
26
42

8. 7   14
14
28

9. 9   6
18
36

DON'T FORGET, MULTIPLES CAN GO FOR EVER AND EVER. THEY ARE INFINITE, BUT MOST OF THE TIME YOU WANT TO FIND THE **LEAST COMMON MULTIPLE**

THE LEAST COMMON MULTIPLE, ALSO KNOWN AS THE **LCM**, IS THE SMALLEST MULTIPLE THEY HAVE THE SAME.

SO WE DO THE SAME THING AS THE PREVIOUS PAGE, BUT WE ARE ONLY LOOKING FOR THE LEAST MULTIPLE THEY HAVE IN COMMON.

FIND THE LEAST COMMON MULTIPLE FOR 3 AND 9

$1 \times 3 = 3$	$1 \times 9 = 9$
$2 \times 3 = 6$	$2 \times 9 = 18$
$3 \times 3 = 9$	$3 \times 9 = 27$
$4 \times 3 = 12$	$4 \times 9 = 36$
$5 \times 3 = 15$	$5 \times 9 = 45$
$6 \times 3 = 18$	$6 \times 9 = 54$

3 AND 9 HAVE MANY SIMILAR MULTIPLES, BUT WHICH ONE IS THE LCM?

FIND THE LCM FOR EACH SET OF NUMBERS.

1. 12   6
12

2. 4   10
20

3. 6   8
24

4. 5   7
35

5. 13   3
39

6. 10   12
60

7. 11   4
44

8. 15   12
60

9. 6   14
42

THE LCM HAS TO BE THE SAME FOR ALL THREE NUMBERS.

10. 2   3   4
12

11. 3   9   6
18

12. 10   7   5
70