INTRO TO FACTORS

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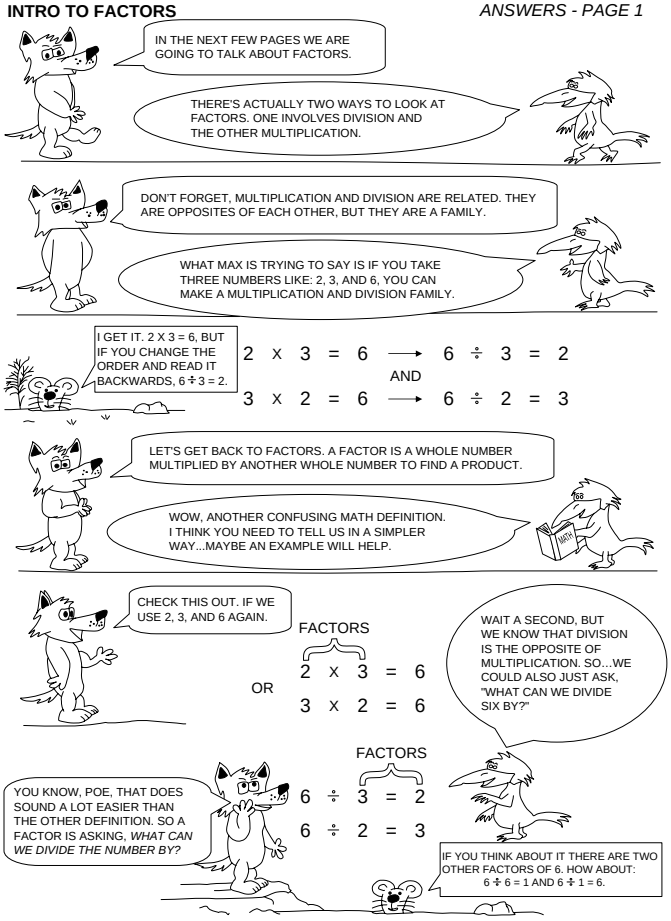

FINDING FACTORS

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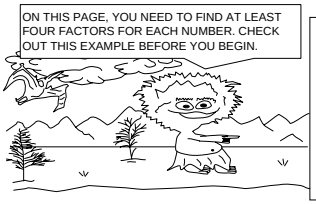

LIST FOUR FACTORS OF 8.

FACTORS				FACTORS				
8 ÷	*2*	=	4	OR	2	X	4	= 8
8 ÷	*4*	=	2		8	X	1	= 8
8 ÷	*8*	=	1					
8 ÷	*1*	=	8					

2, 4, 8, AND 1 ARE ALL FACTORS OF 8.

USE MULTIPLICATION **OR** DIVISION TO FIND AT LEAST FOUR FACTORS FOR EACH NUMBER.

1. FACTORS OF 10 ?

1, 2, 5, 10

2. FACTORS OF 14 ?

1, 2, 7, 14

3. FACTORS OF 15 ?

1, 3, 5, 15

4. FACTORS OF 21 ?

1, 3, 7, 21

5. FACTORS OF 18 ?

1, 2, 3, 6, 9, 18

6. FACTORS OF 20 ?

1, 2, 4, 5, 10, 20

7. FACTORS OF 30 ?

1, 2, 3, 5, 6, 10, 15, 30

8. FACTORS OF 24 ?

1, 2, 3, 4, 6, 8, 12, 24

9. FACTORS OF 36 ?

1, 2, 3, 4, 6, 9, 12, 18, 36

10. FACTORS OF 28 ?

1, 2, 4, 7, 14, 28

11. FACTORS OF 22 ?

1, 2, 11, 22

12. FACTORS OF 12 ?

1, 2, 3, 4, 6, 12

13. FACTORS OF 64 ?

1, 2, 4, 8, 16, 32, 64

14. FACTORS OF 42 ?

1, 2, 3, 6, 7, 14, 21, 42

15. FACTORS OF 60 ?

1, 2, 3, 4, 5, 6, 10, 12, 15, 20, 30, 60

COMMON FACTORS

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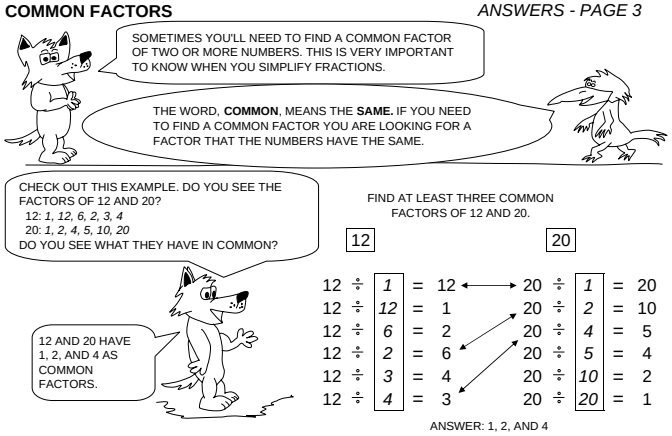

FIND AT LEAST THREE COMMON FACTORS OF 12 AND 20.

12				20			
12 ÷	*1*	=	12	20 ÷	*1*	=	20
12 ÷	*12*	=	1	20 ÷	*2*	=	10
12 ÷	*6*	=	2	20 ÷	*4*	=	5
12 ÷	*2*	=	6	20 ÷	*5*	=	4
12 ÷	*3*	=	4	20 ÷	*10*	=	2
12 ÷	*4*	=	3	20 ÷	*20*	=	1

ANSWER: 1, 2, AND 4

FIND AT LEAST THREE COMMON FACTORS FOR EACH SET OF NUMBERS.

1. COMMON FACTORS OF 8 & 12 ?

1, 2, 4

2. COMMON FACTORS OF 10 & 20 ?

1, 2, 5

3. COMMON FACTORS OF 16 & 4 ?

1, 2, 4

4. COMMON FACTORS OF 9 & 27 ?

1, 3, 9

5. COMMON FACTORS OF 24 & 18 ?

1, 2, 3, 6

6. COMMON FACTORS OF 42 & 21 ?

1, 3, 7, 21

7. COMMON FACTORS OF 30 & 36 ?

1, 2, 3, 6

8. COMMON FACTORS OF 64 & 40 ?

1, 2, 4, 8

9. COMMON FACTORS OF 54 & 45 ?

1, 3, 9

10. COMMON FACTORS OF 44 & 66 ?

1, 2, 11, 22

GREATEST COMMON FACTOR (GCF)

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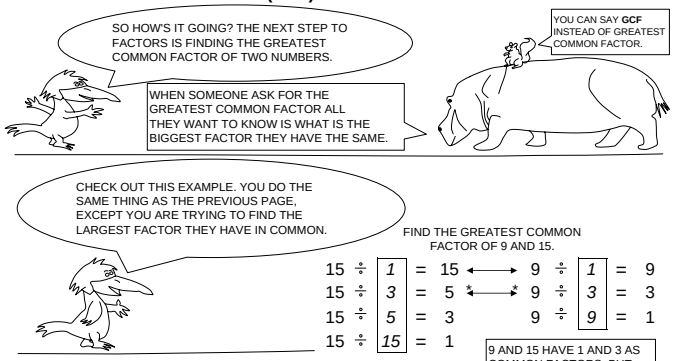

FIND THE GREATEST COMMON FACTOR OF 9 AND 15.

15				9			
15 ÷	*1*	=	15	9 ÷	*1*	=	9
15 ÷	*3*	=	5	9 ÷	*3*	=	3
15 ÷	*5*	=	3	9 ÷	*9*	=	1
15 ÷	*15*	=	1				

9 AND 15 HAVE 1 AND 3 AS COMMON FACTORS, BUT WHICH ONE IS THE GCF?

FIND THE GREATEST COMMON FACTOR FOR EACH SET OF NUMBERS.

1. WHAT IS THE GCF OF 6 & 14 ?

2

2. WHAT IS THE GCF OF 16 & 24 ?

8

3. WHAT IS THE GCF OF 21 & 7 ?

7

4. WHAT IS THE GCF OF 15 & 20 ?

5

5. WHAT IS THE GCF OF 32 & 16 ?

16

6. WHAT IS THE GCF OF 27 & 18 ?

9

7. WHAT IS THE GCF OF 36 & 42 ?

6

8. WHAT IS THE GCF OF 44 & 20 ?

4

9. WHAT IS THE GCF OF 39 & 26 ?

13

10. WHAT IS THE GCF OF 54 & 72 ?

18

DIVISIBILITY RULES

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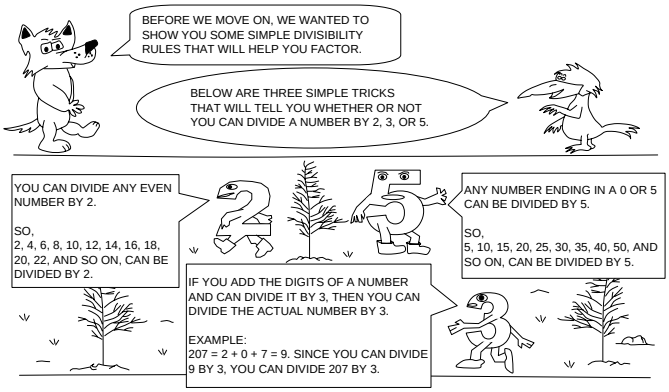

CAN THESE NUMBERS BE DIVIDED BY 2, 3, OR 5?

HELPFUL EXAMPLE

40 — 2 → 40 ENDS IN A *0*, SO YOU KNOW IT'S EVEN. → 40 ÷ *2* = 20

3 → ADD 40's DIGITS, *4 + 0 = 4* YOU CAN'T DIVIDE 4 BY 3. → NO

5 → 40 ENDS IN A *0*. → 40 ÷ *5* = 8

2 AND 5 ARE FACTORS OF 40.

THESE THREE RULES ARE VERY IMPORTANT, BECAUSE MOST NUMBERS CAN BE DIVIDED BY 2, 3, OR 5.

1. 54 — 2, 3 ARE FACTORS OF 54.
2. 87 — 3 IS A FACTOR OF 87.
3. 75 — 3, 5 ARE FACTORS OF 75.
4. 48 — 2, 3 ARE FACTORS OF 48.
5. 96 — 2, 3 ARE FACTORS OF 96.
6. 80 — 2, 5 ARE FACTORS OF 80.
7. 95 — 5 IS A FACTOR OF 95.
8. 72 — 2, 3 ARE FACTORS OF 72.

PRIME NUMBERS

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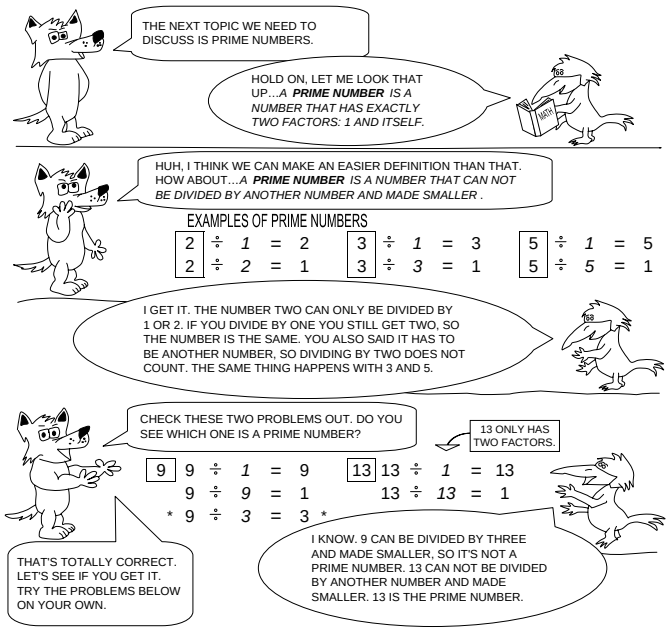

WRITE **YES** IF THE NUMBER IS A PRIME NUMBER OR **NO** IF IT IS NOT.

1. 20 → NO
2. 7 → YES
3. 19 → YES
4. 25 → NO
5. 34 → NO
6. 23 → YES
7. 8 → NO
8. 31 → YES
9. 17 → YES
10. 42 → NO
11. 21 → NO
12. 27 → NO

CIRCLE ALL THE PRIME NUMBERS. USE THE 2, 3, AND 5 RULES FROM THE PREVIOUS PAGE TO HELP.

(2) (3) 4 (5) 6 (7) 8 9 10 (11) 12 (13) 14 15 16 (17) 18 (19) 20 21 22 (23) 24 25 26 27 28 (29) 30

(31) 32 33 34 35 36 (37) 38 39 40 (41) 42 (43) 44 45 46 (47) 48 49 50 51 52 (53) 54 55 56 57 58 (59) 60

(61) 62 63 64 65 66 (67) 68 69 70 (71) 72 (73) 74 75 76 77 78 (79) 80 81 82 (83) 84 85 86 87 88 (89) 90

FACTOR TREES

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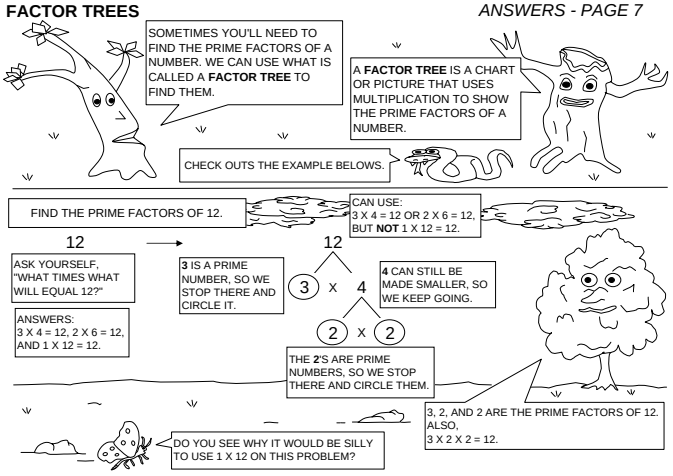

USE THE DIAGRAMS TO FIND THE PRIME FACTORS OF EACH NUMBER.

WAYS OF SOLVING MAY VARY

1. 20 → 5 X 4 → 2 X 2
2. 35 → 7 X 5
3. 42 → 7 X 6 → 2 X 3
4. 22 → 2 X 11

20 = 2 X 2 X 5 — 35 = 7 X 5 — 42 = 2 X 3 X 7 — 22 = 2 X 11

MAKE YOUR OWN FACTOR TREE TO FIND THE PRIME FACTORS OF EACH NUMBER.

WAYS OF SOLVING MAY VARY

	5. 48	6. 60	7. 96
FIRST STEP	6 X 8	6 X 10	8 X 12
	4 X 12	5 X 12	6 X 16
	3 X 16	4 X 15	4 X 24
	2 X 24	2 X 30	2 X 48

48 = 2 X 2 X 2 X 2 X 3 — 60 = 2 X 2 X 3 X 5 — 96 = 2 X 2 X 2 X 2 X 2 X 3

CHECK FOR UNDERSTANDING

ANSWERS - PAGE 8

USE MULTIPLICATION **OR** DIVISION TO FIND AT LEAST FOUR FACTORS FOR EACH NUMBER.

1. FACTORS OF 50 ? — 1, 2, 5, 25, 50
2. FACTORS OF 64 ? — 1, 2, 4, 8, 16, 32, 64
3. FACTORS OF 78 ? — 1, 2, 3, 6, 13, 26, 39, 78

FIND AT LEAST THREE COMMON FACTORS FOR EACH SET OF NUMBERS.

4. COMMON FACTORS OF 42 & 36 ? — 1, 2, 3, 6
5. COMMON FACTORS OF 60 & 80 ? — 1, 2, 10, 20

FIND THE GREATEST COMMON FACTOR FOR EACH SET OF NUMBERS.

6. WHAT IS THE GCF OF 24 & 32 ? — 8
7. WHAT IS THE GCF OF 28 & 42 ? — 14

CAN THESE NUMBERS BE DIVIDED BY 2, 3, OR 5?

8. 135 — 3, 5 ARE FACTORS OF 135.
9. 102 — 2, 3 ARE FACTORS OF 102.

MAKE YOUR OWN FACTOR TREE TO FIND THE PRIME FACTORS OF EACH NUMBER.

	10. 99	11. 112	12. 210
FIRST STEP	9 X 11	8 X 14	10 X 21
	3 X 33	7 X 16	7 X 30
			5 X 42
		4 X 28	3 X 70
		2 X 56	2 X 105

99 = 3 X 3 X 11 — 112 = 2 X 2 X 2 X 2 X 7 — 210 = 2 X 3 X 5 X 7