INTRO TO FACTORS PRACTICE SHEET - A

ANSWERS - PAGE 1

HELPFUL EXAMPLE

MATHEMATICAL DEFINITION	SIMPLE DEFINITION
A ***FACTOR*** IS A NUMBER THAT DIVIDES EXACTLY INTO A GIVEN NUMBER.	THE WORD, ***FACTOR***, IS ASKING, "WHAT CAN YOU DIVIDE THE NUMBER BY?"

LIST AT LEAST FOUR FACTORS FOR EACH NUMBER.

8

8 ÷ *2* = 4
8 ÷ *4* = 2
8 ÷ *8* = 1
8 ÷ *1* = 8

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

20

20 ÷ *4* = 5
20 ÷ *5* = 4
20 ÷ *10* = 2
20 ÷ *2* = 10
20 ÷ *20* = 1
20 ÷ *1* = 20

SO, 4, 5, 2, 10, 20, AND 1 ARE ALL FACTORS OF 20.

IMPORTANT NOTE: SEE HOW ALL THE ANSWERS ARE WHOLE NUMBERS.

LIST AT LEAST FOUR FACTORS FOR EACH NUMBER.

18

18 ÷ *1* = 18
18 ÷ *18* = 1
18 ÷ *2* = 9
18 ÷ *9* = 2
18 ÷ *3* = 6
18 ÷ *6* = 3

FACTORS OF 18: 1, 2, 3, 6, 9, 18

45

45 ÷ *3* = 15
45 ÷ *15* = 3
45 ÷ *5* = 9
45 ÷ *9* = 5
45 ÷ *1* = 45
45 ÷ *45* = 1

FACTORS OF 45: 1, 3, 5, 9, 15, 45

21

FACTORS OF 21: 1, 3, 7, 21

30

FACTORS OF 30: 1, 2, 3, 5, 6, 10, 15, 30

24

FACTORS OF 24: 1, 2, 3, 4, 6, 8, 12, 24

32

FACTORS OF 32: 1, 2, 4, 8, 16, 32

28

FACTORS OF 28: 1, 2, 4, 7, 14, 28

16

FACTORS OF 16: 1, 2, 4, 8, 16

12

FACTORS OF 12: 1, 2, 3, 4, 6, 12

50

FACTORS OF 50: 1, 2, 5, 10, 25, 50

48

FACTORS OF 48: 1, 2, 4, 6, 8, 12, 24, 48

INTRO TO FACTORS PRACTICE SHEET - B

ANSWERS - PAGE 2

HELPFUL EXAMPLE

FIND AT LEAST THREE COMMON FACTORS FOR 8 AND 20.

8

8 ÷ *1* = 8
8 ÷ *2* = 4
8 ÷ *4* = 2
8 ÷ *8* = 1

20

20 ÷ *1* = 20
20 ÷ *2* = 10
20 ÷ *4* = 5
20 ÷ *5* = 4
20 ÷ *10* = 2
20 ÷ *20* = 1

FACTORS OF 8: *1, 2, 4*, 8
FACTORS OF 20: *1, 2, 4*, 5, 10, 20

** COMMON FACTORS: *1, 2, 4* **

SIMPLE DEFINITION: THE WORD, ***COMMON***, MEANS THE SAME.

IMPORTANT NOTE: WHAT THIS TELLS US IS THAT BOTH 8 AND 20 CAN BE DIVIDED BY 1, 2, OR 4.

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

20

20 ÷ *1* = 20
20 ÷ *20* = 1
20 ÷ *4* = 5
20 ÷ *5* = 4
20 ÷ *2* = 10
20 ÷ *10* = 2

32

32 ÷ *1* = 32
32 ÷ *32* = 1
32 ÷ *4* = 8
32 ÷ *8* = 4
32 ÷ *2* = 16
32 ÷ *16* = 2

1, 2, 4 ARE COMMON FACTORS OF 20 AND 32

24 **8**

9

9 ÷ *1* = 9
9 ÷ *9* = 1
9 ÷ *3* = 3

27

27 ÷ *1* = 27
27 ÷ *27* = 1
27 ÷ *3* = 9
27 ÷ *9* = 3

1, 3, 9 ARE COMMON FACTORS OF 9 AND 27

15 **45**

1, 2, 4, 8 ARE COMMON FACTORS OF 24 AND 8

56 **16**

1, 3, 5, 15 ARE COMMON FACTORS OF 15 AND 45

42 **28**

1, 2, 4, 8 ARE COMMON FACTORS OF 56 AND 16

40 **60**

1, 2, 7, 14 ARE COMMON FACTORS OF 42 AND 28

14 **56**

1, 2, 4, 5, 10, 20 ARE COMMON FACTORS OF 40 AND 60

1, 2, 7, 14 ARE COMMON FACTORS OF 14 AND 56

INTRO TO FACTORS PRACTICE SHEET - C

ANSWERS - PAGE 3

LET'S MAKE THIS A LITTLE EASIER!

RULE FOR #2	RULE FOR #3	RULE FOR #5
YOU CAN DIVIDE ANY EVEN NUMBER BY 2. SO, 2, 4, 6, 8, 10, 12, 14, 16, 18, 20, 22, AND SO ON CAN BE DIVIDED BY 2.	IF YOU ADD THE DIGITS OF A NUMBER AND CAN DIVIDE IT BY 3 THEN YOU CAN DIVIDE THE ACTUAL NUMBER BY 3. EXAMPLE: 114 = 1 + 1 + 4 = 6. SINCE YOU CAN DIVIDE 6 BY 3, YOU CAN DIVIDE 114 BY 3.	ANY NUMBER ENDING IN A *0* OR *5* CAN BE DIVIDED BY 5. SO, 5, 10, 15, 20, 25, 30, 35, 40, 50, AND SO ON CAN BE DIVIDED BY 5.

!! THESE RULES WORK FOR ANY WHOLE NUMBER !!

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

30

2 → 30 ENDS IN A *0*, SO YOU KNOW IT'S EVEN. → 30 ÷ *2* = 15
3 → IF YOU ADD 30's DIGITS, *3 + 0 = 3*. YOU CAN DIVIDE *3* BY 3. → 30 ÷ *3* = 10
5 → 30 ENDS IN A *0*. → 30 ÷ *5* = 6

2, 3, AND 5 ARE FACTORS OF 30.

64

2 → 64 ENDS IN A *4*, SO YOU KNOW IT'S EVEN. → 64 ÷ *2* = 32
3 → ADD 64's DIGITS, *6 + 4 = 10*. YOU CAN'T DIVIDE *10* BY 3. → NO
5 → 64 ENDS IN A *4*, NOT A *0* OR *5*. → NO

2 IS A FACTOR OF 64.

75

3, 5 ARE FACTORS OF 75.

90

2, 3, 5 ARE FACTORS OF 90.

132

2, 3 ARE FACTORS OF 132.

354

2, 3 ARE FACTORS OF 354.

43

NONE ARE FACTORS OF 43.

57

3 IS A FACTOR OF 57.

600

2, 3, 5 ARE FACTORS OF 600.

255

3, 5 ARE FACTORS OF 255.

INTRO TO FACTORS PRACTICE SHEET - D

ANSWERS - PAGE 4

HELPFUL EXAMPLE

FIND THE GREATEST COMMON FACTOR OF 8 AND 20.

8

8 ÷ *1* = 8
8 ÷ *2* = 4
8 ÷ *4* = 2
8 ÷ *8* = 1

20

20 ÷ *1* = 20
20 ÷ *2* = 10
20 ÷ *4* = 5
20 ÷ *5* = 4
20 ÷ *10* = 2
20 ÷ *20* = 1

FACTORS OF 8: 1, 2, *4*, 8
FACTORS OF 20: 1, 2, *4*, 5, 10, 20

** *4* IS THE LARGEST ONE THEY HAVE THE SAME **

SO, *4* IS THE GREATEST COMMON FACTOR OF 8 AND 20.

SIMPLE DEFINITION: THE WORD, ***GREATEST COMMON FACTOR***, MEANS THE LARGEST FACTOR THEY HAVE THE SAME.

IMPORTANT NOTE: GREATEST COMMON FACTOR IS ALSO CALLED, **GCF**.

FIND THE GREATEST COMMON FACTOR FOR EACH SET OF NUMBERS.

10 **20**

10 IS THE GCF OF 10 AND 20.

56 **16**

8 IS THE GCF OF 56 AND 16.

30 **45**

15 IS THE GCF OF 30 AND 45.

32 **14**

2 IS THE GCF OF 32 AND 14.

44 **66**

22 IS THE GCF OF 44 AND 66.

12 **28**

4 IS THE GCF OF 12 AND 28.

36 **24**

12 IS THE GCF OF 36 AND 24.

20 **8**

4 IS THE GCF OF 20 AND 8.

28 **42**

14 IS THE GCF OF 28 AND 42.

54 **27**

27 IS THE GCF OF 54 AND 27.