Factorization Practice

Name: _____ Date: _____

Question 1

Find all the factors of the following numbers

I. 16

II. 72

Factorization Practice

III. 36

IV. 89

Factorization Practice

V. 50

VI. 2

Factorization Practice

Question 2

Which is NOT a factor of the number

I. 777

A. 3 B. 259 C. 1 D. 11

II. 64

A. 2 B. 128 C. 32 D. 8

III. 54

A. 2 B. 9 C. 3 D. 13.5

IV. 88

A. 8 B. 11 C. 3 D. 44

Factorization Practice

Name: **Key** Date: _____

Question 1

Find all the factors of the following numbers

I. 16

Divisibility Tests

2 Divisibility Test **(even number in the one's place 0 , 2 , 4 , 6 , 8)**
16 ✓ Success

3 Divisibility Test **(sum of the number's digits is divisible by 3)**
16 → 1+6=7 × Fail

5 Divisibility Test **(0 or 5 in the one's place)**
16 × Fail

6 Divisibility Test **(even number in the one's place 0 , 2 , 4 , 6 , 8 AND sum of the number's digits is divisible by 3)**
16 ✓ Success
16 → 1+6=7 × Fail

9 Divisibility Test **(sum of the number's digits is divisible by 9)**
16 → 1+6=7 × Fail

10 Divisibility Test **(0 in the one's place)**
16 × Fail

Multiples Method

$1 \cdot 16 = 16$
$2 \cdot 8 = 16$
$4 \cdot 4 = 16$

Division Method

$16\overline{)16}\ 01$ $2\overline{)16}\ 08$ $4\overline{)16}\ 04$
$1\overline{)16}\ 16$ $8\overline{)16}\ 02$

Factors of 16: 1 , 2 , 4 , 8 , 16

II. 72

Divisibility Tests

2 Divisibility Test **(even number in the one's place 0 , 2 , 4 , 6 , 8)**
72 ✓ Success

3 Divisibility Test **(sum of the number's digits is divisible by 3)**
72 → 7+2=9 ✓ Success

5 Divisibility Test **(0 or 5 in the one's place)**
72 × Fail

6 Divisibility Test **(even number in the one's place 0 , 2 , 4 , 6 , 8 AND sum of the number's digits is divisible by 3)**
72 ✓ Success
72 → 7+2=9 ✓ Success

9 Divisibility Test **(sum of the number's digits is divisible by 9)**
72 → 7+2=9 ✓ Success

10 Divisibility Test **(0 in the one's place)**
72 × Fail

Multiples Method

$72 \cdot 1 = 72$
$36 \cdot 2 = 72$
$24 \cdot 3 = 72$
$18 \cdot 4 = 72$
$12 \cdot 6 = 72$
$9 \cdot 8 = 72$

Division Method

$72\overline{)72}\ 01$ $36\overline{)72}\ 02$ $24\overline{)72}\ 03$ $18\overline{)72}\ 04$ $12\overline{)72}\ 06$ $9\overline{)72}\ 08$
$1\overline{)72}\ 72$ $2\overline{)72}\ 36$ $3\overline{)72}\ 24$ $4\overline{)72}\ 18$ $6\overline{)72}\ 12$ $8\overline{)72}\ 09$

Factors of 72: 1 , 2 , 3 , 4 , 6 , 8 , 9 , 12 , 18 , 24 , 36 , 72

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III. 36

Divisibility Tests

2 Divisibility Test **(even number in the one's place 0, 2, 4, 6, 8)**

36 ✓ Success

3 Divisibility Test **(sum of the number's digits is divisible by 3)**

36 → 3+6=9 ✓ Success

5 Divisibility Test **(0 or 5 in the one's place)**

36 × Fail

6 Divisibility Test **(even number in the one's place 0, 2, 4, 6, 8 AND sum of the number's digits is divisible by 3)**

36 ✓ Success

36 → 3+6=9 ✓ Success

9 Divisibility Test **(sum of the number's digits is divisible by 9)**

36 → 3+6=9 ✓ Success

10 Divisibility Test **(0 in the one's place)**

36 × Fail

Multiples Method

$1 \cdot 36 = 36$
$2 \cdot 18 = 36$
$3 \cdot 12 = 36$
$4 \cdot 9 = 36$
$6 \cdot 6 = 36$

Division Method

$36 \overline{)36}\ 01$ $18 \overline{)36}\ 02$ $12 \overline{)36}\ 03$ $9 \overline{)36}\ 04$ $6 \overline{)36}\ 06$

$1 \overline{)36}\ 36$ $2 \overline{)36}\ 18$ $3 \overline{)36}\ 12$ $4 \overline{)36}\ 09$ $6 \overline{)36}\ 06$

Factors of 36: 1, 2, 3, 4, 6, 9, 12, 18, 36

IV. 89 Prime Number

Divisibility Tests

2 Divisibility Test **(even number in the one's place 0, 2, 4, 6, 8)**

89 × Fail

3 Divisibility Test **(sum of the number's digits is divisible by 3)**

89 → 8+9=17 × Fail

5 Divisibility Test **(0 or 5 in the one's place)**

89 × Fail

6 Divisibility Test **(even number in the one's place 0, 2, 4, 6, 8 AND sum of the number's digits is divisible by 3)**

89 × Fail

89 → 8+9=17 × Fail

9 Divisibility Test **(sum of the number's digits is divisible by 9)**

89 → 8+9=17 × Fail

10 Divisibility Test **(0 in the one's place)**

89 × Fail

Multiples Method

$1 \cdot 89 = 89$

Division Method

$89 \overline{)89}\ 01$

$1 \overline{)89}\ 89$

Factors of 89: 1, 89

Factorization Practice

V. 50

Divisibility Tests

2 Divisibility Test **(even number in the one's place 0 , 2 , 4 , 6 , 8)**

50 ✓ Success

3 Divisibility Test **(sum of the number's digits is divisible by 3)**

50 → 5+0=5 × Fail

5 Divisibility Test **(0 or 5 in the one's place)**

50 ✓ Success

6 Divisibility Test **(even number in the one's place 0 , 2 , 4 , 6 , 8 AND sum of the number's digits is divisible by 3)**

50 ✓ Success

50 → 5+0=5 × Fail

9 Divisibility Test **(sum of the number's digits is divisible by 9)**

50 → 5+0=5 × Fail

10 Divisibility Test **(0 in the one's place)**

50 ✓ Success

Multiples Method

$1 \cdot 50 = 50$

$2 \cdot 25 = 50$

$5 \cdot 10 = 50$

Division Method

$50 \overline{)50} = 01$ $25 \overline{)50} = 02$ $10 \overline{)50} = 05$

$1 \overline{)50} = 50$ $2 \overline{)50} = 25$ $5 \overline{)50} = 10$

Factors of 50: 1 , 2 , 5 , 10 , 25 , 50

VI. 2 Prime Number

Divisibility Tests

2 Divisibility Test **(even number in the one's place 0 , 2 , 4 , 6 , 8)**

2 ✓ Success

3 Divisibility Test **(sum of the number's digits is divisible by 3)**

2 → 2 × Fail

5 Divisibility Test **(0 or 5 in the one's place)**

2 × Fail

6 Divisibility Test **(even number in the one's place 0 , 2 , 4 , 6 , 8 AND sum of the number's digits is divisible by 3)**

2 ✓ Success

2 → 2 × Fail

9 Divisibility Test **(sum of the number's digits is divisible by 9)**

2 → 2 × Fail

10 Divisibility Test **(0 in the one's place)**

2 × Fail

Multiples Method

$1 \cdot 2 = 2$

Division Method

$2 \overline{)2} = 1$

$1 \overline{)2} = 2$

Factors of 2: 1 , 2

Factorization Practice

Question 2

Which is NOT a factor of the number

I. 777

A. 3 B. 259 C. 1 D. 11

3 Divisibility Test **(sum of the number's digits is divisible by 3)**

777 → 7+7+7=21 ✓ Success

Multiples Method

$1 \cdot 777 = 777$

$3 \cdot 259 = 259$

Division Method

$777 \overline{)777}$ 001 $259 \overline{)777}$ 003

$1 \overline{)777}$ 777 $3 \overline{)777}$ 259

II. 64

A. 2 B. 128 C. 32 D. 8

A factor cannot be greater than its product

III. 54

A. 2 B. 9 C. 3 D. 13.5

Factors can only be natural numbers

IV. 88

A. 8 B. 11 C. 3 D. 44

3 Divisibility Test **(sum of the number's digits is divisible by 3)**

88 → 8+8=16 ✗ Fail

Multiples Method

$2 \cdot 44 = 88$

$8 \cdot 11 = 88$

Division Method

$44 \overline{)88}$ 02 $11 \overline{)88}$ 08

$2 \overline{)88}$ 44 $8 \overline{)88}$ 11