

Name \_\_\_\_\_

Date \_\_\_\_\_



# PRIME FACTORIZATION CHALLENGES 1

*See if you can solve these prime factorization challenges!*

## CHALLENGE A

- I am a product of 3 *different* prime numbers.
- I am less than 100.

Who am I? \_\_\_\_\_

(There are 4 possibilities – can you find them all?)



## CHALLENGE B

- I am the product just one prime factor raised to the 3<sup>rd</sup> power.
- I am less than 200 but greater than 10.

Who am I? \_\_\_\_\_

(There are 3 possibilities – can you find them all?)



## CHALLENGE C

- I am the product of 2 different prime factors.
- Both of my factors have an exponent of 2.
- I am less than 200.

Who am I? \_\_\_\_\_

(There are 3 possibilities – can you find them all?)





# PRIME FACTORIZATION CHALLENGES 1 ANSWERS

See if you can solve these prime factorization challenges!

## CHALLENGE A

- I am a product of 3 *different* prime numbers.
- I am less than 100.

Who am I?  $2 \times 3 \times 5 = 30$ ,  $2 \times 3 \times 7 = 42$ ,  $2 \times 3 \times 11 = 66$ ,  $2 \times 3 \times 13 = 78$

(There are 4 possibilities – can you find them all?)

## CHALLENGE B

- I am the product just one prime factor raised to the 3<sup>rd</sup> power.
- I am less than 200 but greater than 10.

Who am I?  $3^3 = 27$ ;  $4^3 = 64$   $5^3 = 125$

(There are 3 possibilities – can you find them all?)

## CHALLENGE C

- I am the product of 2 different prime factors.
- Both of my factors have an exponent of 2.
- I am less than 200.

Who am I?  $2^2 \times 3^2 = 36$ ;  $2^2 \times 5^2 = 100$ ;  $2^2 \times 7^2 = 196$

(There are 3 possibilities – can you find them all?)

