Name\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Date\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

PERFECT SQUARES

A number is a PERFECT SQUARE if \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_  
  
\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| First 12 Perfect Squares: | | | | |
| NUMBER MULTIPLIED  BY ITSELF | PERFECT SQUARES |  | NUMBER MULTIPLIED  BY ITSELF | PERFECT SQUARES |
| 1 X 1 = | \_\_\_\_\_\_\_\_\_\_\_ |  | 7 X 7 = | \_\_\_\_\_\_\_\_\_\_\_ |
| 2 X 2 = | \_\_\_\_\_\_\_\_\_\_\_ |  | 8 X 8 = | \_\_\_\_\_\_\_\_\_\_\_ |
| 3 X 3 = | \_\_\_\_\_\_\_\_\_\_\_ |  | 9 X 9 = | \_\_\_\_\_\_\_\_\_\_\_ |
| 4 X 4 = | \_\_\_\_\_\_\_\_\_\_\_ |  | 10 X 10 = | \_\_\_\_\_\_\_\_\_\_\_ |
| 5 X 5 = | \_\_\_\_\_\_\_\_\_\_\_ |  | 11 X 11 = | \_\_\_\_\_\_\_\_\_\_\_ |
| 6 X 6 = | \_\_\_\_\_\_\_\_\_\_\_ |  | 12 X 12 = | \_\_\_\_\_\_\_\_\_\_\_ |

A variable is a perfect square if it has an \_\_\_\_\_\_\_\_\_\_\_\_\_ exponent.

|  |  |
| --- | --- |
| VARIABLES MULTIPLIED  BY ITSELF | PERFECT SQUARES |
|  | \_\_\_\_\_\_\_\_\_\_\_ |
|  | \_\_\_\_\_\_\_\_\_\_\_ |
|  | \_\_\_\_\_\_\_\_\_\_\_ |
|  | \_\_\_\_\_\_\_\_\_\_\_ |

SQUARE ROOTS

Taking the square root of a number is the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

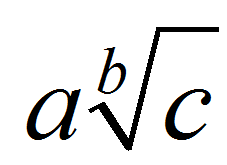
For example if , then . The symbol tells you to \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

PARTS OF A RADICAL

An expression that contains a square root is a \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_. It can have three parts.

Radicand: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_  
  
\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_



Coefficient: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_  
  
\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Index: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_  
  
\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Simplify the following radical expressions.

|  |  |
| --- | --- |
| \_\_\_\_\_\_\_\_\_\_\_ | \_\_\_\_\_\_\_\_\_\_\_ |
| \_\_\_\_\_\_\_\_\_\_\_ | \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ = \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ |
| \_\_\_\_\_\_\_\_\_\_\_ | \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ = \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ |
| \_\_\_\_\_\_\_\_\_\_\_ | \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ = \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ |

When dealing with exponents, \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ to get the exponent of the roots.

If your radicand has more than one factor, \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

NON-PERFECT SQUARES

Simplify:

Since 24 is not a perfect square, its \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_. To simplify  
  
this radical, 24 needs to be \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.   
  
However, one of the factors must be a \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

What is the highest factor of 24 that is also a perfect square? \_\_\_\_\_\_. Therefore, 24 = \_\_\_\_ X \_\_\_\_\_

Simplify:

What is the highest factor of 32 that is also a perfect square? \_\_\_\_\_\_. Therefore, 32 = \_\_\_\_ X \_\_\_\_\_

Simplify:

What is the highest factor of 54 that is also a perfect square? \_\_\_\_\_\_. Therefore, 54 = \_\_\_\_ X \_\_\_\_\_

=

Simplify:

What is the highest factor of that is also a perfect square? \_\_\_\_\_\_. Therefore, = \_\_\_\_ X \_\_\_\_\_

Simplify:

What’s the highest factor and perfect square of ? \_\_\_\_\_\_\_\_\_. Therefore, = \_\_\_\_ X \_\_\_\_\_

Simplify:

What is the highest factor and perfect square of ? \_\_\_\_\_\_\_. Therefore = \_\_\_\_ X \_\_\_\_\_

PERFECT CUBES

A number is a PERFECT CUBE if \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_  
  
\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| First 5 Perfect CUBES and Perfect CUBES Variables | | | | |
| NUMBER MULTIPLIED  BY ITSELF 3 TIMES | PERFECT CUBES |  | VARIABLE MULTIPLIED  BY ITSELF 3 TIMES | PERFECT CUBES |
| 1 X 1 X 1 = | \_\_\_\_\_\_\_\_\_\_\_ |  |  | \_\_\_\_\_\_\_\_\_\_\_ |
| 2 X 2 X 2 = | \_\_\_\_\_\_\_\_\_\_\_ |  |  | \_\_\_\_\_\_\_\_\_\_\_ |
| 3 X 3 X 3 = | \_\_\_\_\_\_\_\_\_\_\_ |  |  | \_\_\_\_\_\_\_\_\_\_\_ |
| 4 X 4 X 4 = | \_\_\_\_\_\_\_\_\_\_\_ |  | A variable is a perfect square if the exponent is \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_  \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ | |
| 5 X 5 X 5 = | \_\_\_\_\_\_\_\_\_\_\_ |  |

Taking the cube root of a number is the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

For example if , then . The symbol tells you to \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Simplify the following radical expressions:

|  |
| --- |
| \_\_\_\_\_\_\_\_\_\_\_ |
| \_\_\_\_\_\_\_\_\_\_\_ |
| \_\_\_\_\_\_\_\_\_\_\_ |
| \_\_\_\_\_\_\_\_\_\_\_ |

NON-PERFECT CUBES

Simplify:

What is its highest factor and perfect cube the radicand? \_\_\_\_\_\_. Therefore, 54? = \_\_\_\_ X \_\_\_\_\_

Simplify:

What is its highest factor and perfect cube of the radicand? \_\_\_\_\_\_. Therefore, ? = \_\_\_\_ X \_\_\_\_\_