

## Exponents / Powers

ex 1. Write expressions as powers.

$$4 \cdot 4 \cdot 4 \cdot 4 = 4^4$$

$$13 \cdot 13 \cdot 13 + 7 \cdot 7 = 13^3 + 7^2$$

ex 2. Find values of powers.

$$5^3 = 5 \cdot 5 \cdot 5$$

$$\sqrt{25} = 5$$

$$125$$

$$2^3 + 4^2$$

$$(2 \cdot 2 \cdot 2) + (4 \cdot 4)$$

$$8 + 16$$

$$24$$

On your own p 12-13 1-11 odd

1. Write product as power

$$(1) a \cdot 6 \cdot 6 \cdot 6 \cdot 6 \cdot 6 \cdot 6$$

(2) Find the value of the power

$$(3) 6^3$$

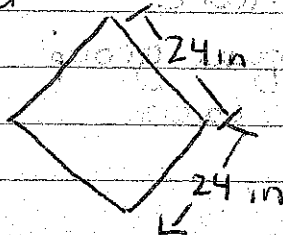
$$(5) 3^4$$

Determine if number is a perfect square

$$(7) 25$$

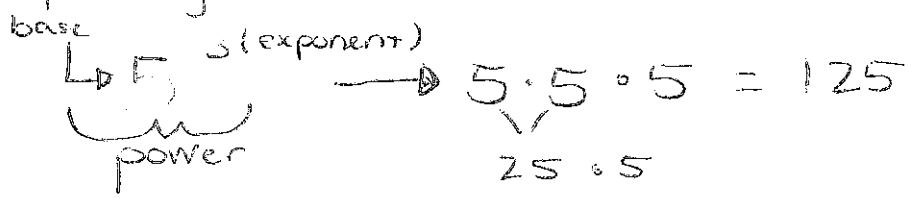
$$(9) 99$$

(11) What is the area of the square traffic sign in square inches? In square feet?



# Exponents/Powers

- exponents show repeated multiplication.  $3 \cdot 3 \cdot 3$  (base)
- exponents represent how many times a number is multiplied by itself.



<p>Exponential form (write as power)</p> $2^4$	<p>word form</p> <p>two to the fourth power</p>
<p>Expanded form (write as product) (write as expression)</p> $2 \cdot 2 \cdot 2 \cdot 2$	<p>Standard form (find the value)</p> $16$

\* Any number raised to the 1<sup>st</sup> power is itself  
 $3^1 = 3$      $14^1 = 14$

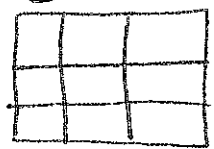
\* Any number raised to the zero power is 1  
 $7^0 = 1$

\* perfect square: the square of a whole #.  
 # multiplied by itself twice.

ex.  $4 = 2^2$



$3^2 = 9$



$6 \cdot 6 = 36$

↑  
perfect square