KEY

Changing Dimensions – NOTES

When you are looking at how changing the dimensions affects area, you only have 2 dimensions.

The length and width.

Example:

Area = Length x Width

A = 6 x 3

A = 18 cm^2

If we **double** the dimensions, how does it affect area and why?

Length = 12 (doubled) Width = 6 (doubled)

Area = Length x Width

A = 12 x 6

A = 72 cm^2

The area of the rectangle quadrupled because you have two dimensions and each dimension was doubled.

$2^2 = 4$

What do you think would happen to the area if we tripled or quadrupled the dimensions?

Tripled Length = 18 cm Width = 9 cm

$18 \cdot 9 = 162\ cm^2$

9 times larger

Quadruple Length = 24 cm Width = 12 cm

$24 \cdot 12 = 288\ cm^2$

16 times bigger

# of dimensions

0

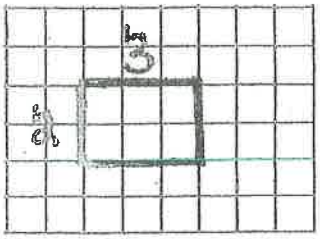
two changed dimensions

triple 3 ② Area is = 9 times larger

quadruple 4 ② Area is = 16 times larger

Name: _____ Block: _____

Changing Dimensions

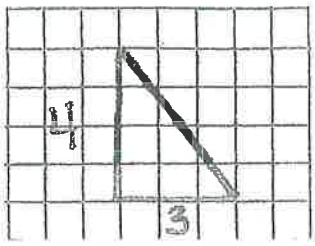


P = 10 units

A = 16 units²

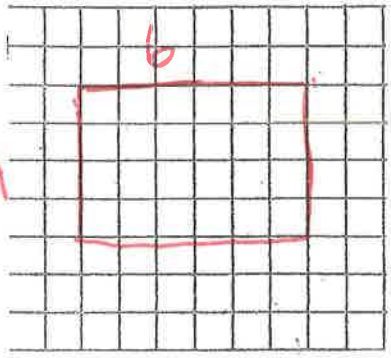
$A = \frac{1}{2}bh$

$A = \frac{1}{2} \cdot 3 \cdot 4$



A = 6 units²

Double the Dimensions



$2^2 = 4$

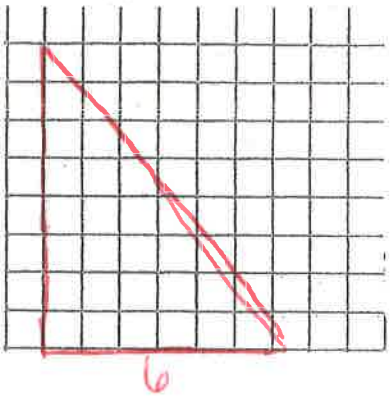
P = 20 units (per. doubled)

A = 24 units² (area quadrupled)

$A = \frac{1}{2}bh$

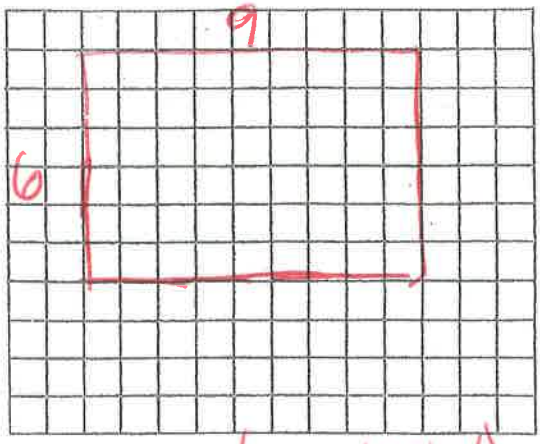
$A = \frac{1}{2} \cdot 6 \cdot 8$

$2^2 = 4$



A = 24 units² quadrupled

Triple the Dimensions



$3^2 = 9$

P = 30 units (per. tripled)

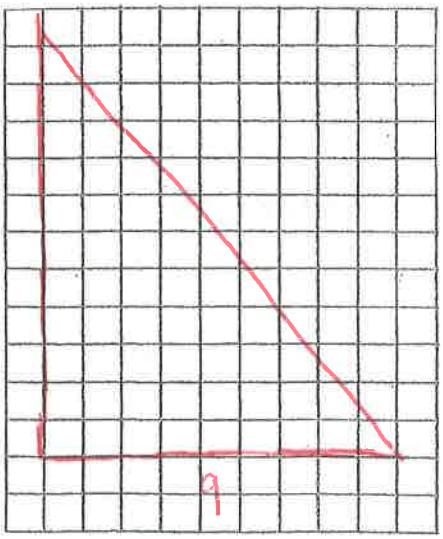
A = 54 units² (area is 9x bigger)

12

$A = \frac{1}{2}bh$

$A = \frac{1}{2} \cdot 9 \cdot 12$

$3^2 = 9$



A = 54 units² 9 x bigger