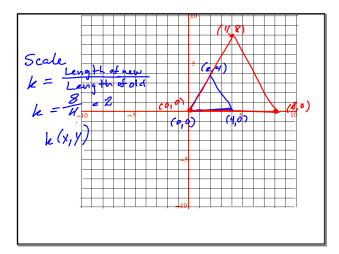---

Slide 1:

6.6 Dilations

One of 4 transformations
in Geometry

Rotation   Turn
Reflection Flip   } same size
Translation Slide
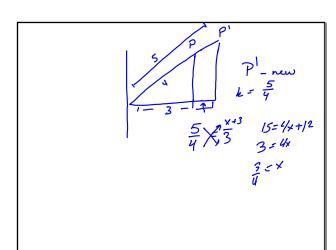

Slide 2:

Dilation - Change
in size but not shape

Dilations describe
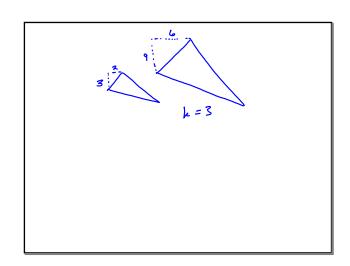Similar Polygons

original   image

Slide 3:

Scale

$k = \dfrac{\text{Length of new}}{\text{Length of old}}$

$k = \dfrac{8}{4} = 2$

$k(x, y)$

(4, 8)
(2, 4)
(0, 0)
(0, 0)
(4, 0)
(8, 0)

Slide 4:

Dilation is described
two ways

Enlargement → $k > 1$ $k = 2$
Reduction → $0 < k < 1$ $k = \frac{1}{2}$

Slide 5:

P' - new

$k = \dfrac{5}{4}$

$\dfrac{5}{4} \times \dfrac{x+3}{3}$ $15 = 4x + 12$

$3 = 4x$

$\dfrac{3}{4} = x$

P   P'
5
4
1 — 3 — 4

Slide 6:

6
9
3
3
3

$k = 3$

Centered at (5,5)

k = 3

every distance from (5,5) is 3x as long