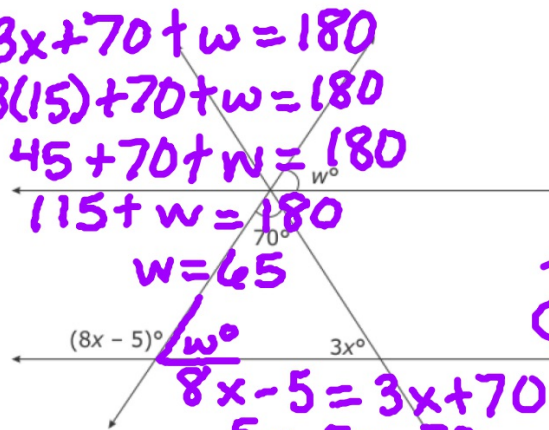


In the figure below, lines e and f are parallel.



$3x + 70 + w = 180$
 $3(15) + 70 + w = 180$
 $45 + 70 + w = 180$
 $115 + w = 180$
 $w = 65$

$8x - 5 = 3x + 70$
 $5x - 5 = 70$
 $5x = 75$
 $x = 15$

What is the measure of $\angle w$?

65°

Which numerical expression is equivalent to $(4^4)^3 \times 4 \times 3^0$?

- A. 4^{12}
- B. 4^{13}
- C. $4^{12} \times 3$
- D. $4^{13} \times 3$

$(4^4)^3 \times 4 \times 3^0$
 $(4^4)^3 \times 4 \times 1$
 $4^{12} \times 4$
 4^{13}

3) Warm-Up 3/13/17

Which number is located between 19 and 20 on a number line?

- A. $\sqrt{298}$
- B. $\sqrt{340}$
- C. $\sqrt{391}$
- D. $\sqrt{402}$

19^2 20^2
 361 400

Which number is equivalent to the repeating decimal 0.242242242...?

- 4.
- A. $\frac{24}{100}$
 - B. $\frac{242}{999}$
 - C. $\frac{242}{1000}$
 - D. $\frac{2422}{9999}$

$\frac{242}{999}$ $.242$

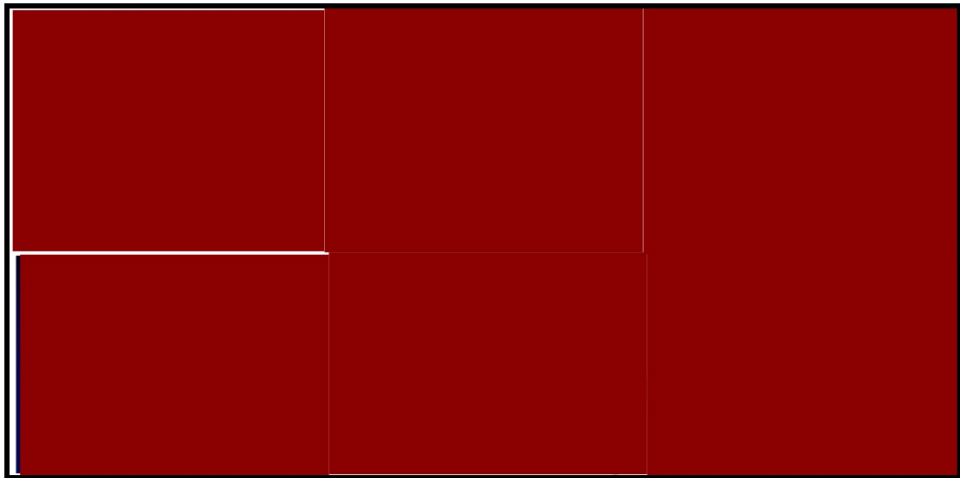
Please turn in your flashback friday and progress reports.

Dilations

Dilations



Dilation is a type of transformation that causes an image to stretch or shrink in proportion to its original size.



Scale Factor

The ratio by which the image stretches or shrinks is known as the scale factor.

If the scale factor > 1 , then the image is enlarged.

If the scale factor is > 0 and < 1 , then the image will shrink.

Multiply the dimensions of the original image by the scale factor to get the dimensions of the dilated image.

You can not divide to get the scale factor...
you must change it to multiplying by a
fraction.

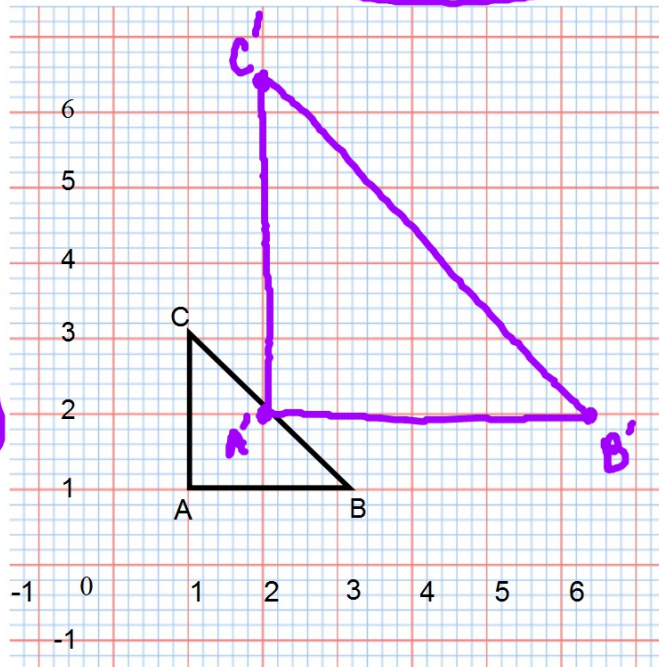
For example,

If each side is 4 in the original figure, and
the
new figure reduces each side to 2 what is
the
scale factor? $\div 2$ scale factor of $\frac{1}{2}$

Constructing Dilations

Draw a dilation of a right-angled triangle with sides, 2 cm, 2 cm, and 2.82 cm, with the scale factor of 2.

$A(1, 1)$
 $B(3.2, 1)$
 $C(1, 3.2)$

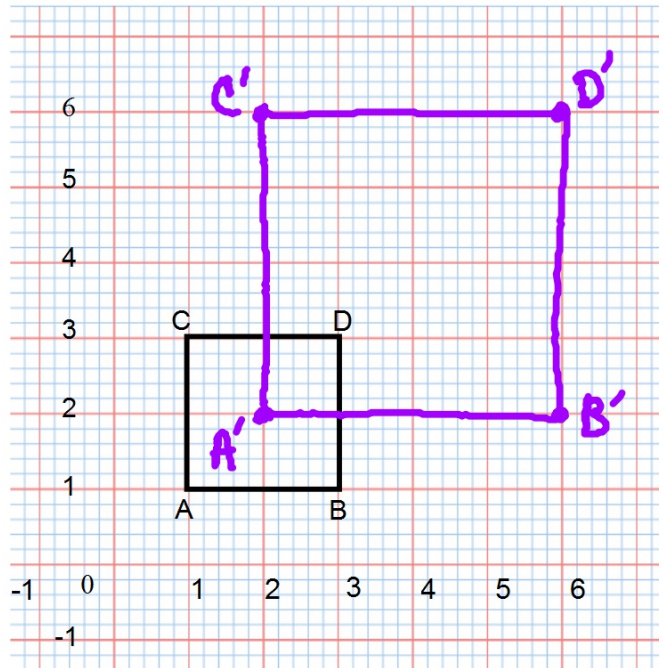


$A'(2, 2)$
 $B'(6.4, 2)$
 $C'(2, 6.4)$

Activity

Create the dilated image of a square, whose has a scale factor of 2.

$A(1,1)$
 $B(3,1)$
 $C(1,3)$
 $D(3,3)$



$A'(2,2)$
 $B'(6,2)$
 $C'(2,6)$
 $D'(6,6)$

Activity

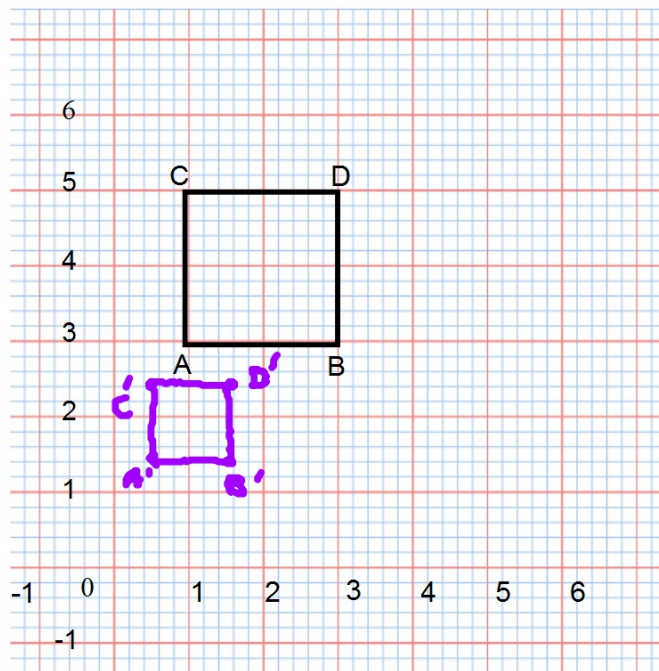
Create the dilated image of a square, whose has a scale factor of $\frac{1}{2}$.

$$A(1,3)$$

$$B(3,3)$$

$$C(1,5)$$

$$D(3,5)$$



$$A'\left(\frac{1}{2}, \frac{3}{2}\right)$$

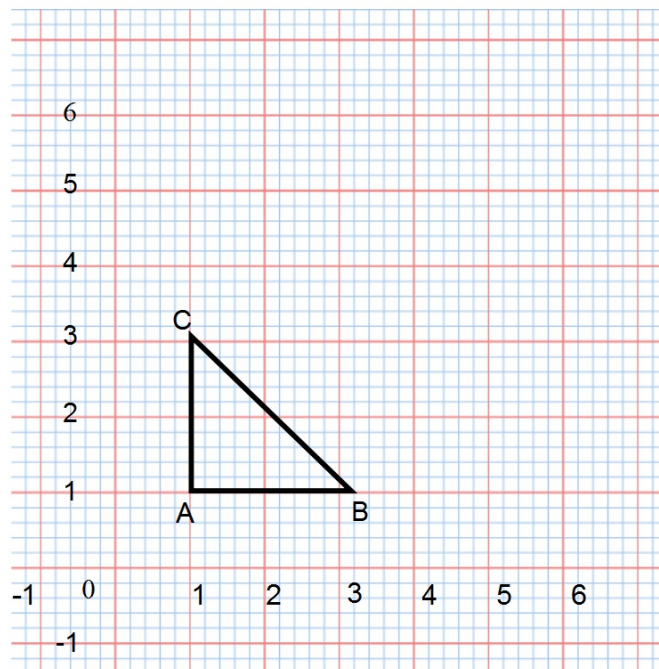
$$B'\left(\frac{3}{2}, \frac{3}{2}\right)$$

$$C'\left(\frac{1}{2}, \frac{5}{2}\right)$$

$$D'\left(\frac{3}{2}, \frac{5}{2}\right)$$

Constructing Dilations

Draw a dilation of a right-angled triangle with scale factor of $\frac{1}{3}$.



Check Your Understanding

- 1 The ratio by which the image stretches or shrinks is known as the scale factor.

True

False

Select the correct answer.

Check Your Understanding

- 2 Dilations create similar images with the change in the length of the sides or the area.

True

False

Select the correct answer.

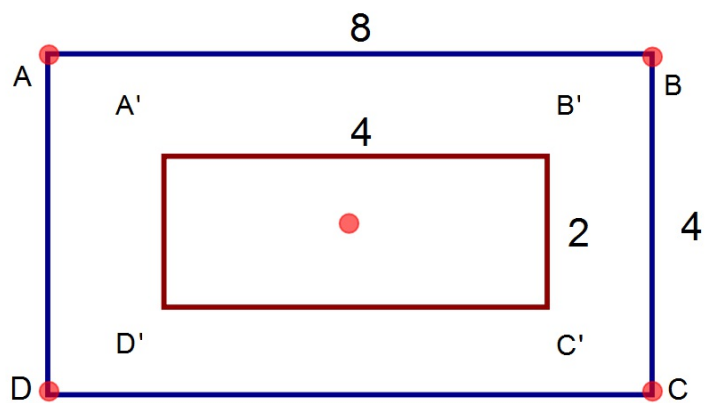
Check Your Understanding

3 Rectangle A' B' C' D' is a dilated image of rectangle ABCD.

True

False

$$\frac{4}{2} = \frac{8}{4}$$
$$2 = 2 \checkmark$$



Select the correct answer.

Check Your Understanding

- 4 A table is 6 cm wide. After dilation, the table is 3 cm wide. Calculate the scale factor for this dilation.

~~A 2~~

B $\frac{1}{2}$

C $\frac{1}{3}$

~~D 4~~

$$6 \rightarrow 3$$

Select the correct answer.

Check Your Understanding

- 5 If a balloon of diameter 2 cm is dilated with a scale factor of 1.5, then what is the diameter of the dilated balloon?

A 3

B 4

C 5

D 6

$$2(1.5) = 3$$

Select the correct answer.

Check Your Understanding

6 What is the scale factor for the given pair of images?

A 2

B $\frac{1}{2}$

C 4

D $\frac{1}{4}$

48 inches



12 inches



Select the correct answer.