

# Printout

June 21, 2021 1:27 PM

Core Skill 1				
Core Skill 2				
Core Skill 3				
Core Skill 4				
Overall				

Core Skills #1: Scale Factor

SHOW ALL WORK!!

1. Complete the Scale factor table, show all work to the right!!

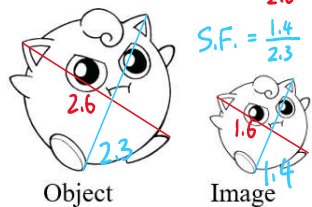
Object length	Image Length	Scale Factor	Reduction or Enlargement?
24 cm	6 cm	$\frac{1}{4}$	Re
5.2 in	$X = 15.6$ in	3	En
$X = 4$ m	32 m	8	En

$S.F. = \frac{I_{im}}{O_{bj}}$

$\rightarrow 3 = \frac{X}{5.2} \quad 3(5.2) = X \quad 15.6 = X$

$\rightarrow 8 = \frac{32}{X} \quad X = \frac{32}{8} \quad X = 4$

2. Determine the scale factor for the figure. (Take 2 measurements and get an average.)

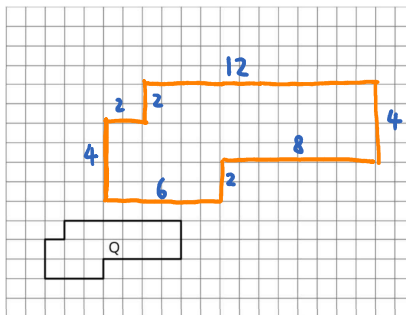


$S.F. = \frac{1.6}{2.6} = 0.615$

$S.F. = \frac{1.4}{2.3} = 0.609$

Average S.F. =  $\frac{0.615 + 0.609}{2} =$  Scale Factor  $0.612$

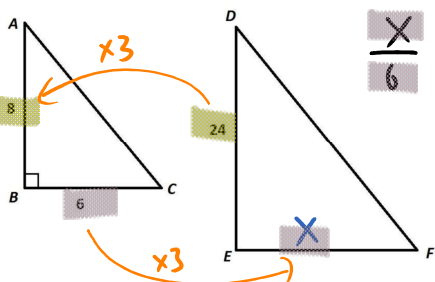
3. Draw the image with a scale factor of 2, find the perimeter of the new polygon.



Perimeter: 40 units

Core Skills #2: Similar Triangle and Polygons

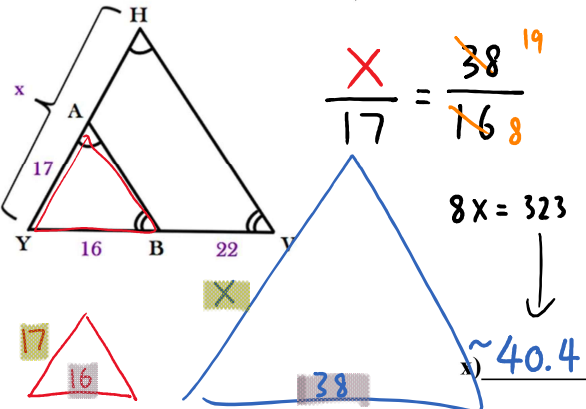
4.  $\triangle ABC$  and  $\triangle DEF$  are similar, find length "EF"



$\frac{X}{6} = \frac{24}{8}$

EF) 18

5.  $\triangle AYB$  and  $\triangle HYV$  are similar, solve for "x"

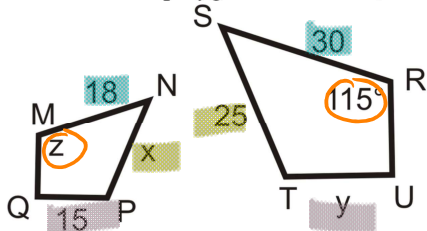


$\frac{X}{17} = \frac{38}{16}$

$8X = 323$

$X = \frac{323}{8} \approx 40.4$

6. These two polygons are similar, find  $\angle Z$ , length "x" and length "y"



$25 \cdot \frac{X}{25} = \frac{18}{30} \cdot 25$

$X = 15$

$15 \cdot \frac{Y}{15} = \frac{30}{18} \cdot 15$

$Y = 25$

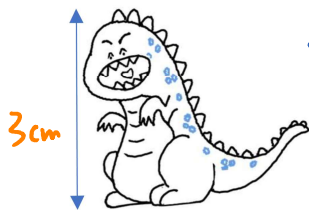
$\angle Z$   $115^\circ$

length "x" 15

length "y" 25

Core 1 Extending

7. Baby Cheung wants a real size Godzilla balloon for his birthday. Calculate the actual height of Godzilla (in meter) if the scale of the image is 1:4000

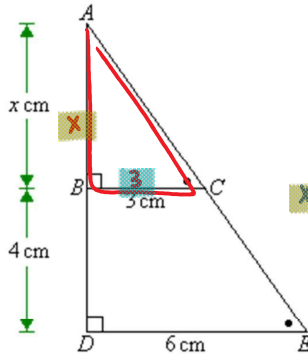


$1 : 4000$   
 $\therefore 3 \text{ cm} = 12000 \text{ cm}$   
 $100 \text{ cm} = 1 \text{ m}$   
 $120 \text{ m}$

Ans) 120 m

Core 2 Extending

8.  $\triangle ABC$  and  $\triangle ADE$  are similar, solve for "x"



$\frac{x+4}{x} = \frac{6}{3}$

$3(x+4) = 6x$

$+ 3x + 12 = 6x - 3x$

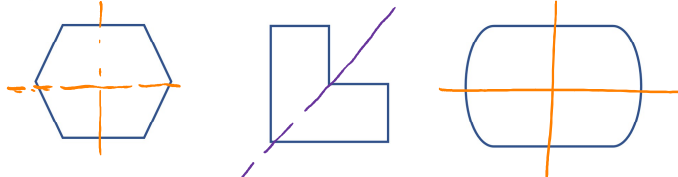
$12 = 3x$

$4 = x$

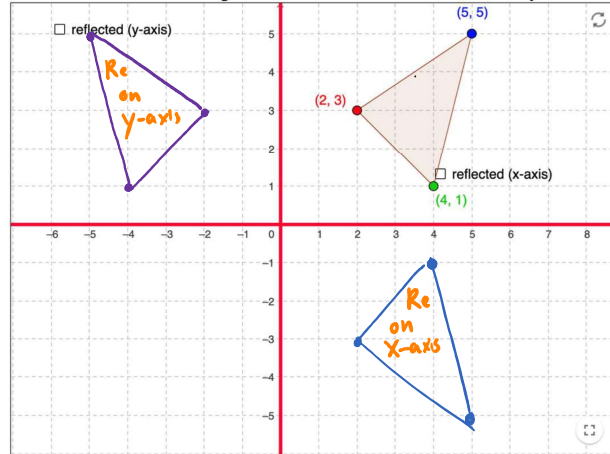
Ans) 4 cm

**Core skill #3: Reflection and symmetry**

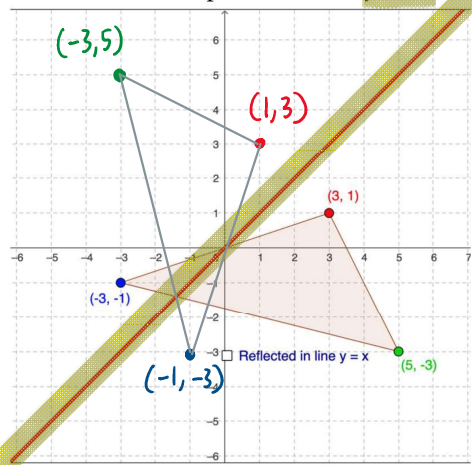
9. Draw the lines of symmetry



10. Reflect the triangle in both the x-axis and the y-axis.



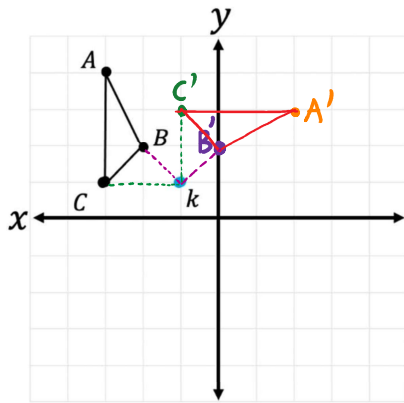
11. Reflect the shapes on the line  $y = x$



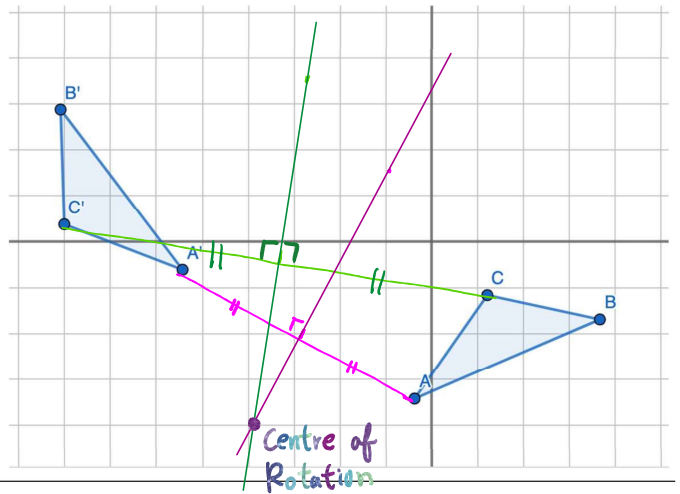
$(3, 1) \rightarrow (1, 3)$   
 $(-3, -1) \rightarrow (-1, -3)$   
 $(5, -3) \rightarrow (-3, 5)$

**Core skill 4 : Rotation and Center of Rotation**

12. Rotate the figure  $-90^\circ$  about the point of rotation  $k$ , show the newly rotated triangle marked as  $A'$   $B'$  and  $C'$



13. Locate the centre of rotation



**Core 3 Extending**

14.  $\triangle ABC$  has vertices  $A:(1, 2)$ ,  $B:(4, 3)$ , and  $C:(3, 6)$ . What are the new coordinates of the new vertices if  $\triangle ABC$  is **reflected**

- over the x-axis
- on the line  $y = x$

	over the x-axis	on the line $y = x$
A:(1, 2)	(1, -2)	(2, 1)
B:(4, 3)	(4, -3)	(3, 4)
C:(3, 6)	(3, -6)	(6, 3)

**Core 4 Extending**  $100^\circ$

15. Rotate the figure  $100^\circ$  about the point of origin  $(0, 0)$ , show the newly rotated triangle marked as  $A'$   $B'$  and  $C'$

