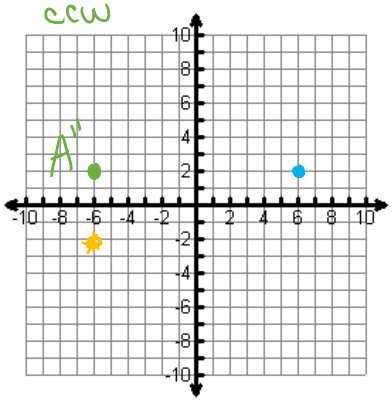
Geometry

Semester 2 Mixed Review

Name: _____

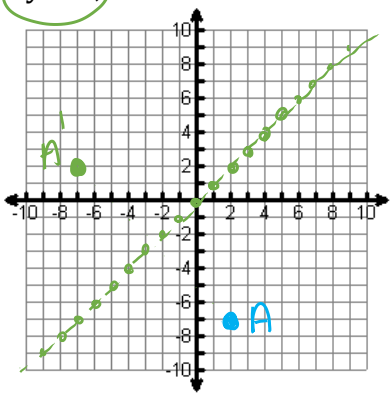
What is the image of (6, 2) when it is rotated 180° and then reflected over the x-axis?

ccw



(-6, 2)

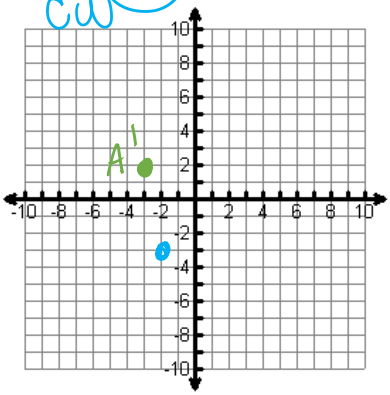
When the point (2, -7) is reflected across the line y = x, what is the location of the new point?



A' (-7, 2)

When the point (-2, -3) is rotated about the origin -90°, what is the location of the new point?

CW



A' (-3, 2)

Find each interior angle of a regular convex decagon. n = 10

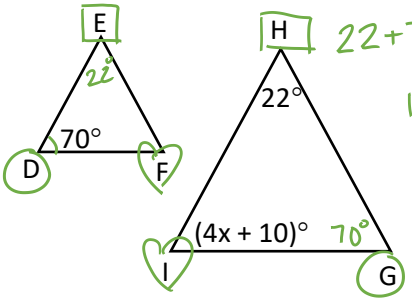
① $S_I = (n-2)180$
$= (10-2)180$
$= 8 \cdot 180$
$S_I = 1440$

② Each int∠ $= \frac{1440}{10}$

∠ = 144°

∠s ≅, sides proportional

ΔDEF ~ ΔGHI. Find the value of x.



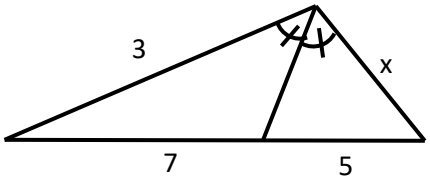
22 + 70 + 4x + 10 = 180

102 + 4x = 180

4x = 78

x = 19.5

Find the value of x.



① $\frac{3}{7} = \frac{x}{5}$

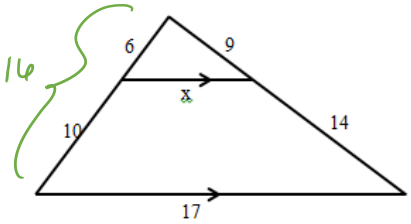
$7x = 15$

$x = 15/7$ or 2.14

② $\frac{3}{x} = \frac{7}{5}$

x = 15/7 or 2.14

Find the value of x.

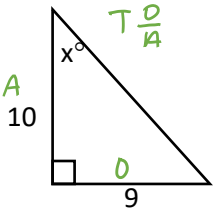


* only can use similar △s Thrm!

$\frac{6}{x} = \frac{16}{17} \Rightarrow 16x = 102$

x = 6.375 or 51/8

Find the value of x.



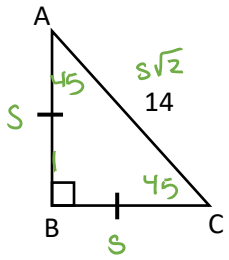
TOA

$\tan x = \frac{9}{10}$

$\tan^{-1}(\frac{9}{10}) = x$

x ≈ 41.99°

Solve for AB.



$\frac{s\sqrt{2}}{\sqrt{2}} = \frac{14}{\sqrt{2}} \cdot \frac{\sqrt{2}}{\sqrt{2}} = \frac{14\sqrt{2}}{2} = 7\sqrt{2}$

$s = 7\sqrt{2}$

$AB = 7\sqrt{2}$

Find the area of the circle, given the circumference of the circle is 20π.

① $C = 2\pi r$ ② $A = \pi r^2$

$\frac{20\pi}{2} = \frac{2\pi r}{2}$ $A = \pi(10)^2$

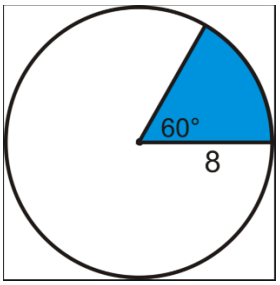
$10 = r$ $A = 100\pi\ u^2$

Find the area of an equilateral triangle with a side length of 10.

$A_{\triangle} = \frac{s^2\sqrt{3}}{4}$

$= \frac{10^2\sqrt{3}}{4} = \frac{100\sqrt{3}}{4} = 25\sqrt{3}\ u^2$

Find the arc length.



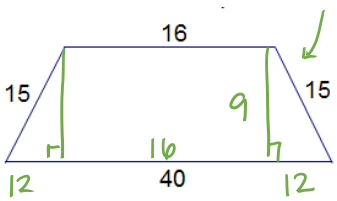
$AL = \frac{m}{360} \cdot \pi d$

$= \frac{60}{360} \cdot 16\pi$

$= \frac{1}{6} \cdot 16\pi$

$AL = \frac{8}{3}\pi$

Find the area of the isosceles ~~triangle~~ trapezoid below.

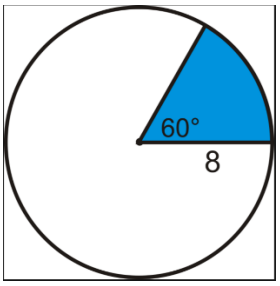


3-4-5 * 3

$A_{Trap} = \frac{b_1 + b_2}{2} \cdot h$

$= \frac{16+40}{2} \cdot 9 = 28 \cdot 9 = 252\ u^2$

Find the area of the sector.



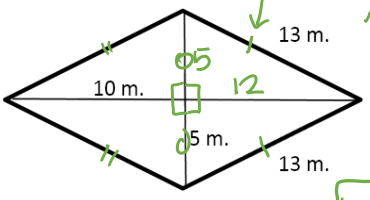
$A_{sector} = \frac{m}{360} \cdot \pi r^2$

$= \frac{60}{360} \cdot 64\pi$

$= \frac{1}{6} \cdot 64\pi$

$= \frac{32}{3}\pi$

Find the area of the kite.



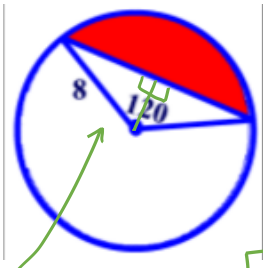
5-12-13

$A = \frac{d_1 \cdot d_2}{2}$

$A = \frac{22 \cdot 10}{2}$

$A = 110\ m^2$

Find the area of the segment.

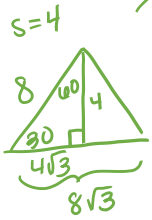


① $A_{sec} = \frac{m}{360} \cdot \pi r^2$

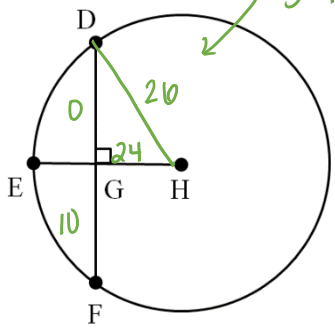
$= \frac{120}{360} \cdot 64\pi = \frac{64}{3}\pi$

② $A_{\triangle} = \frac{b \cdot h}{2} = \frac{8\sqrt{3}\ 4}{2} = 16\sqrt{3}$

③ $A_{seg} = \left(\frac{64}{3}\pi - 16\sqrt{3}\right) u^2$



Given Circle H with a radius 26 inches long and DF = 20 inches. Find EG.



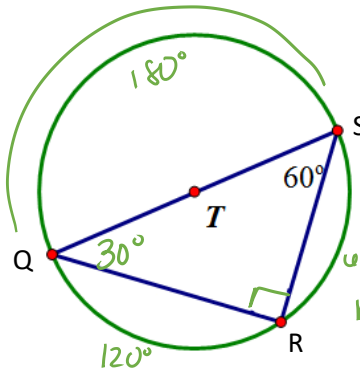
5-12-13 * 2

EG = EH − GH

= 26 − 24

EG = 2 in

Find the measure of $\overset{\frown}{QS}$, $\overset{\frown}{QR}$, and $\overset{\frown}{SR}$

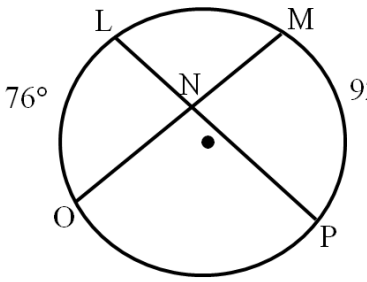


$m\overset{\frown}{QS} = 180°$

$m\overset{\frown}{QR} = 60 \cdot 2 = 120°$ (ON)

$m\overset{\frown}{RS} = 30 \cdot 2 = 60°$

Find m∠MNP.



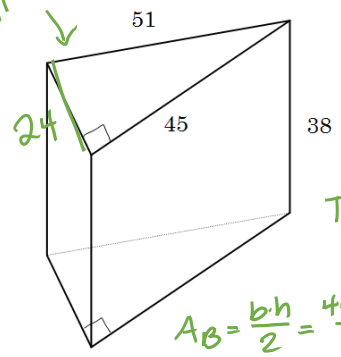
$\text{inside} = \frac{\text{arc} + \text{arc}}{2}$

$m\angle MNP = \frac{92 + 76}{2}$

$m\angle MNP = 84°$

8·15+1 * 3

Find the total surface area of the prism.



LSA = P · h = 120(38) = 4560 u²

P = 24 + 45 + 51 = 120

h = 38

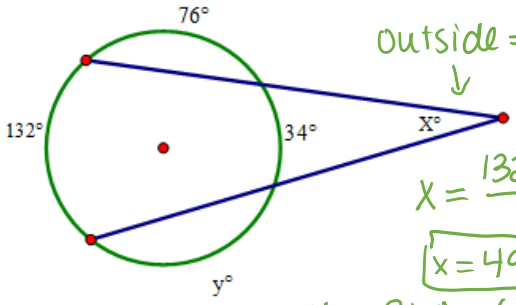
TSA = LSA + 2 A_B

= 4560 + 2(540)

TSA = 5640 u²

$A_B = \frac{b \cdot h}{2} = \frac{45 \cdot 24}{2} = 540$

Find the measure of x and y.



$\text{outside} = \frac{\text{Arc} - \text{arc}}{2}$

$x = \frac{132 - 34}{2}$

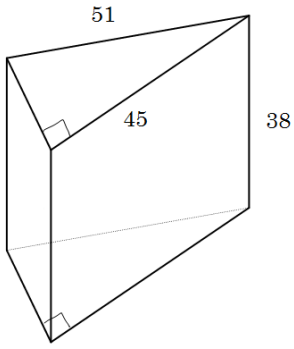
$x = 49°$

$y = 360 - (132 + 34 + 76)$

$y = 360 - 242$

$y = 118°$

Find the volume of the prism.

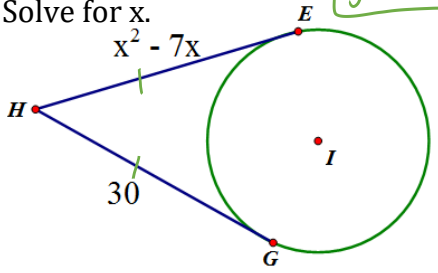


$V = A_B \cdot h$

V = 540 38

V = 20,520 u³

Solve for x.



* tangent − tangent Thm *

$x^2 - 7x = 30$

Factor → $x^2 - 7x - 30 = 0$

$(x - 10)(x + 3) = 0$

$x - 10 = 0 \quad x + 3 = 0$

$x = 10 \quad x = -3$