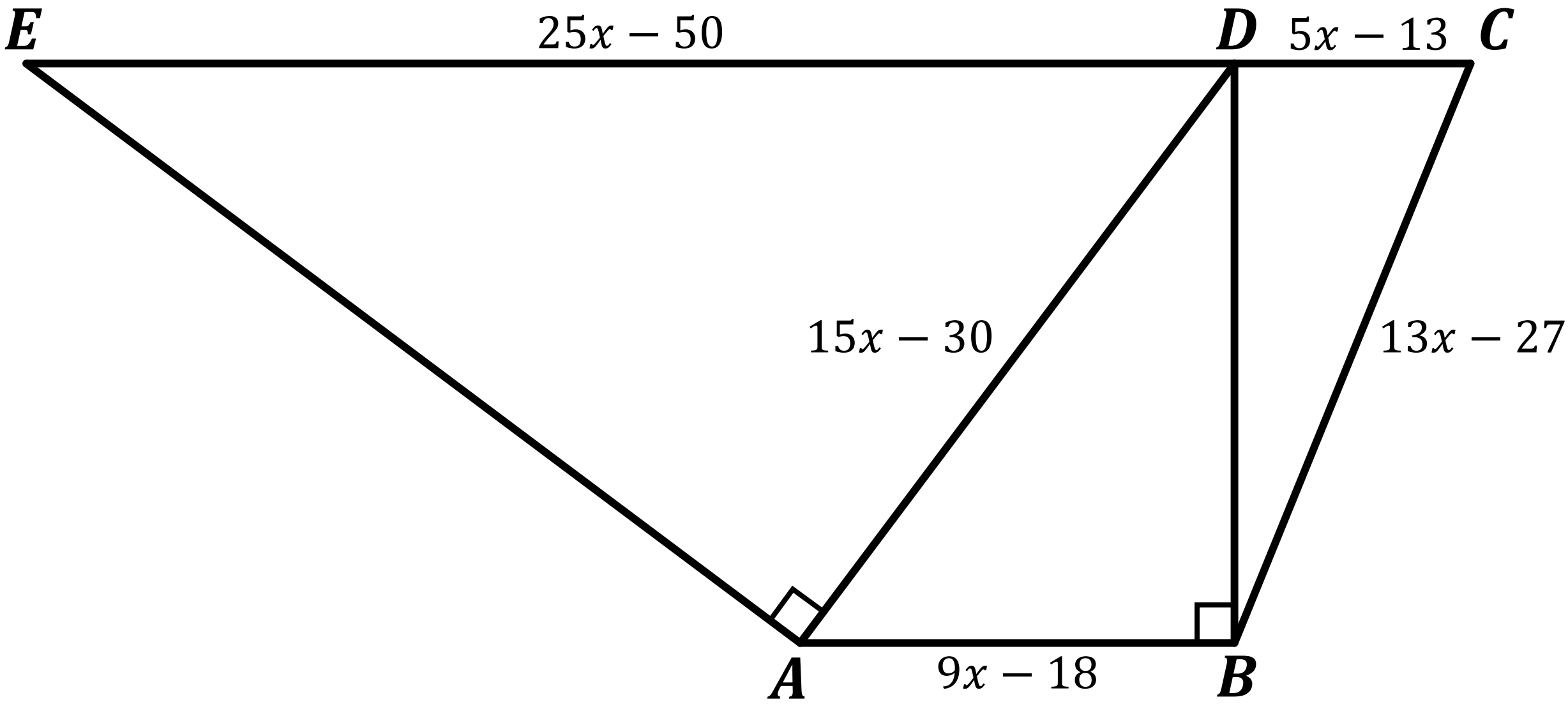
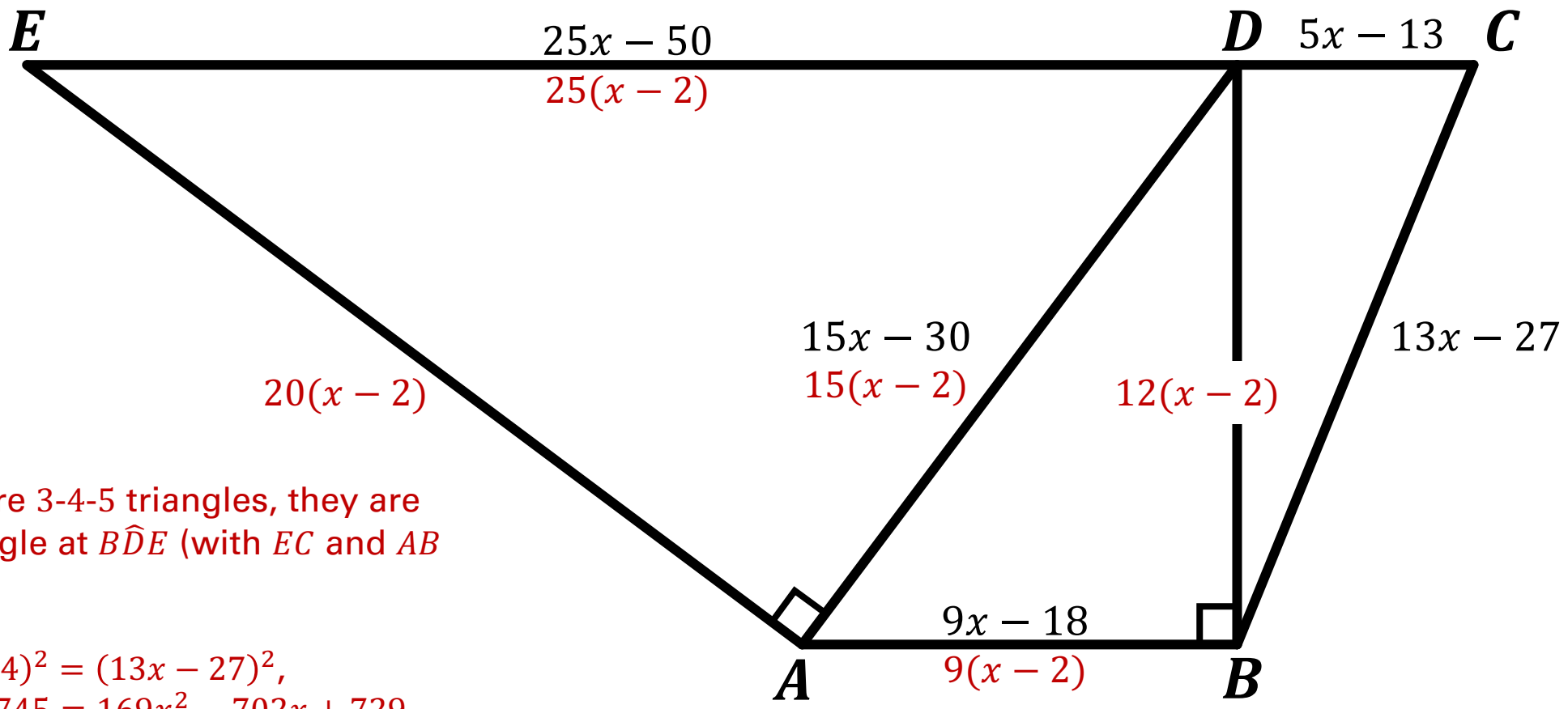
**The Sandcrawler** Find the area and perimeter of $ABCE$.



**The Sandcrawler** Find the area and perimeter of $ABCE$.




Since both $ABD$ and $DAE$ are 3-4-5 triangles, they are similar and form a right angle at $B\widehat{D}E$ (with $EC$ and $AB$ parallel lines).

So, $(5x-13)^2+(12x-24)^2=(13x-27)^2$,

$169x^2-706x+745=169x^2-702x+729$,

$4x=16$,

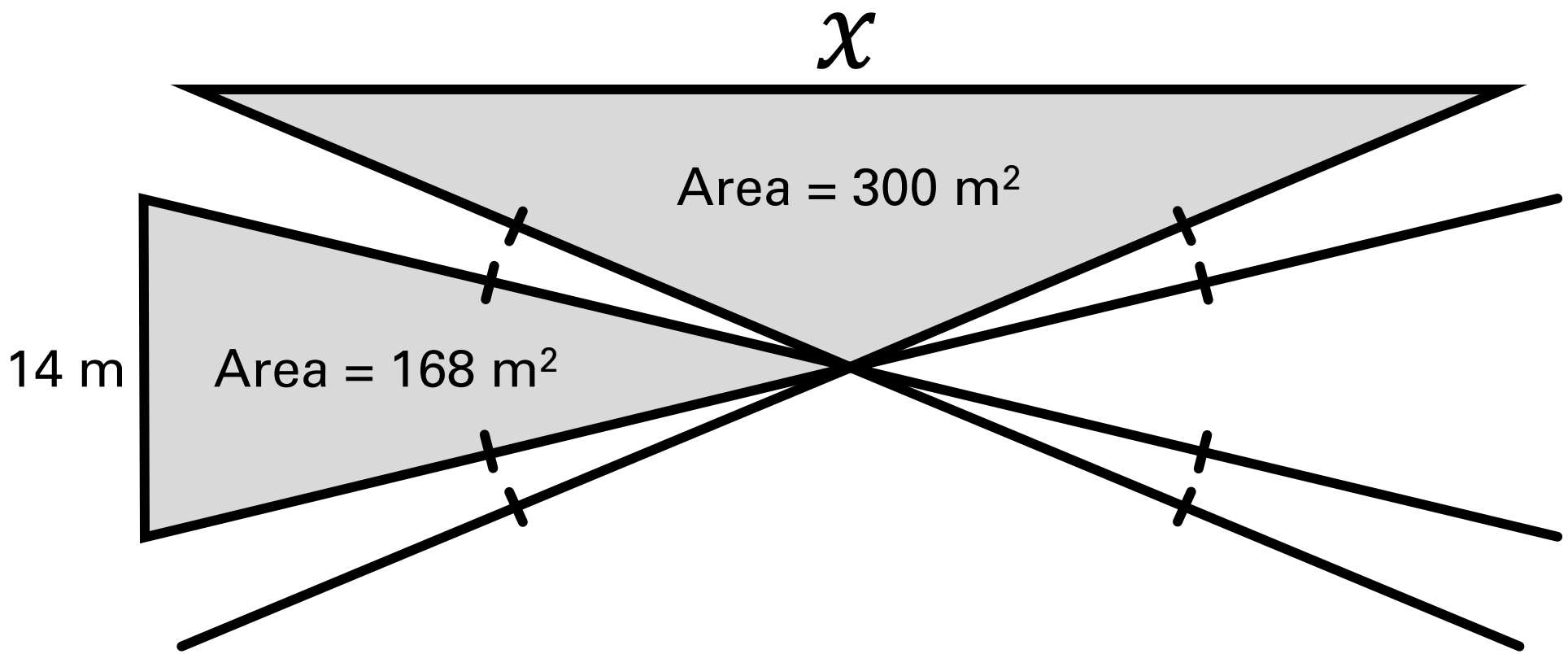
$x=4$.

So, $P=57+40+25+18=132$ and

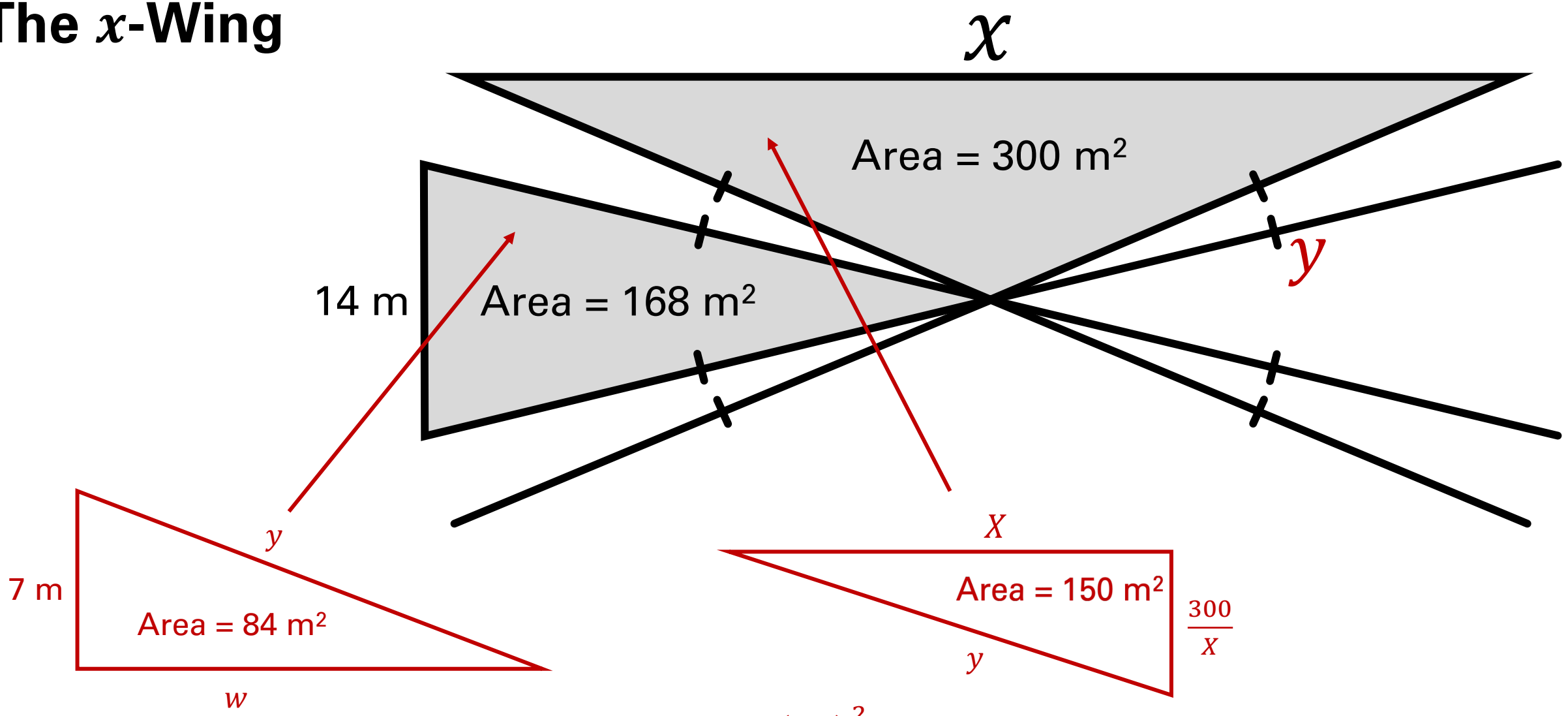
$A=\frac{1}{2}(57+18)\times 24=900$.

$$\boldsymbol{x=4}$$
$$\boldsymbol{P=132}$$
$$\boldsymbol{A=900}$$

# The $x$-Wing



# The $x$-Wing




$w = \frac{168}{7} = 24$ m

$y = \sqrt{24^2 + 7^2} = 25$ m

$X^2 + \left(\frac{300}{X}\right)^2 = 25^2 = 625$

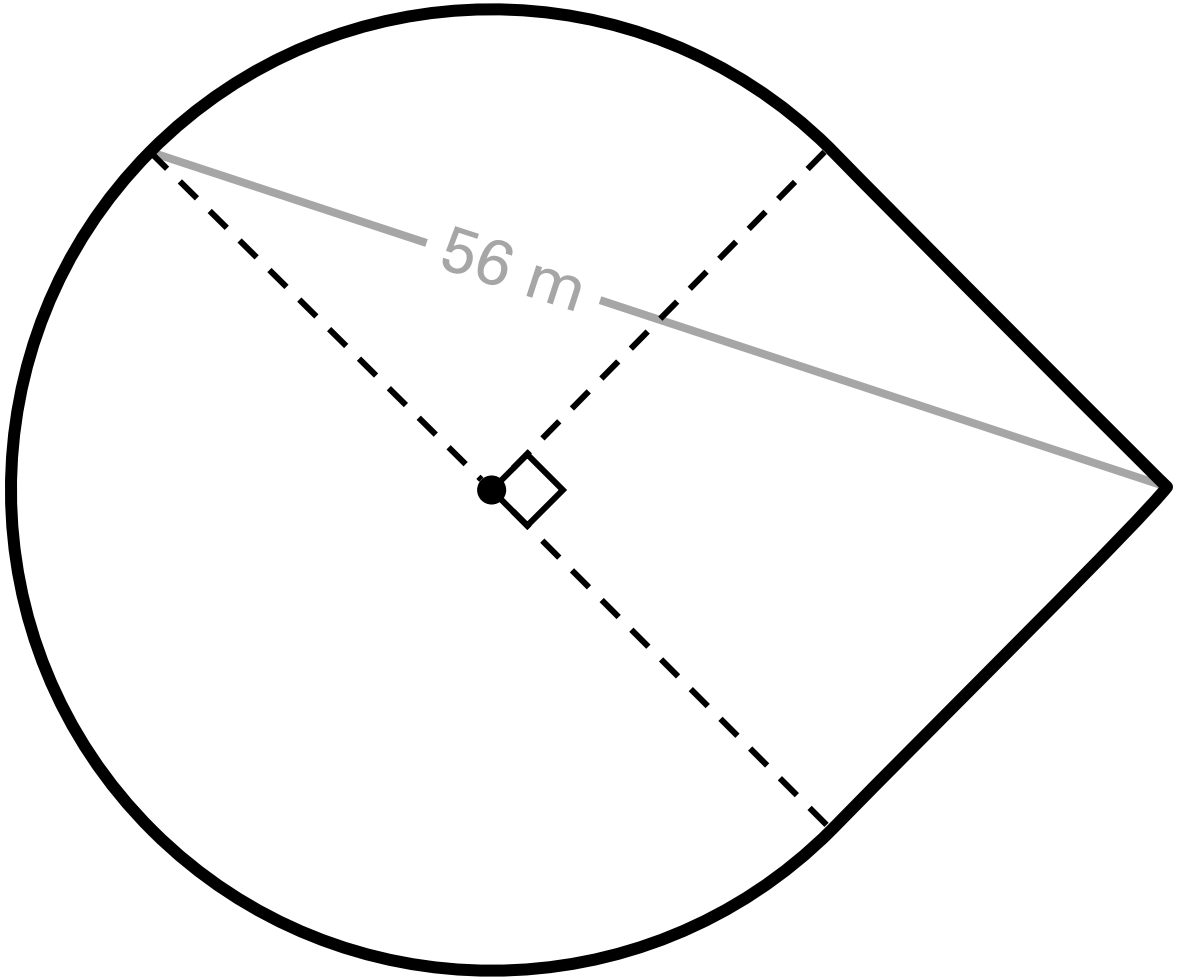
$X^4 + 90000 = 625X^2$

$(X^2 - 400)(X^2 - 225) = 0$

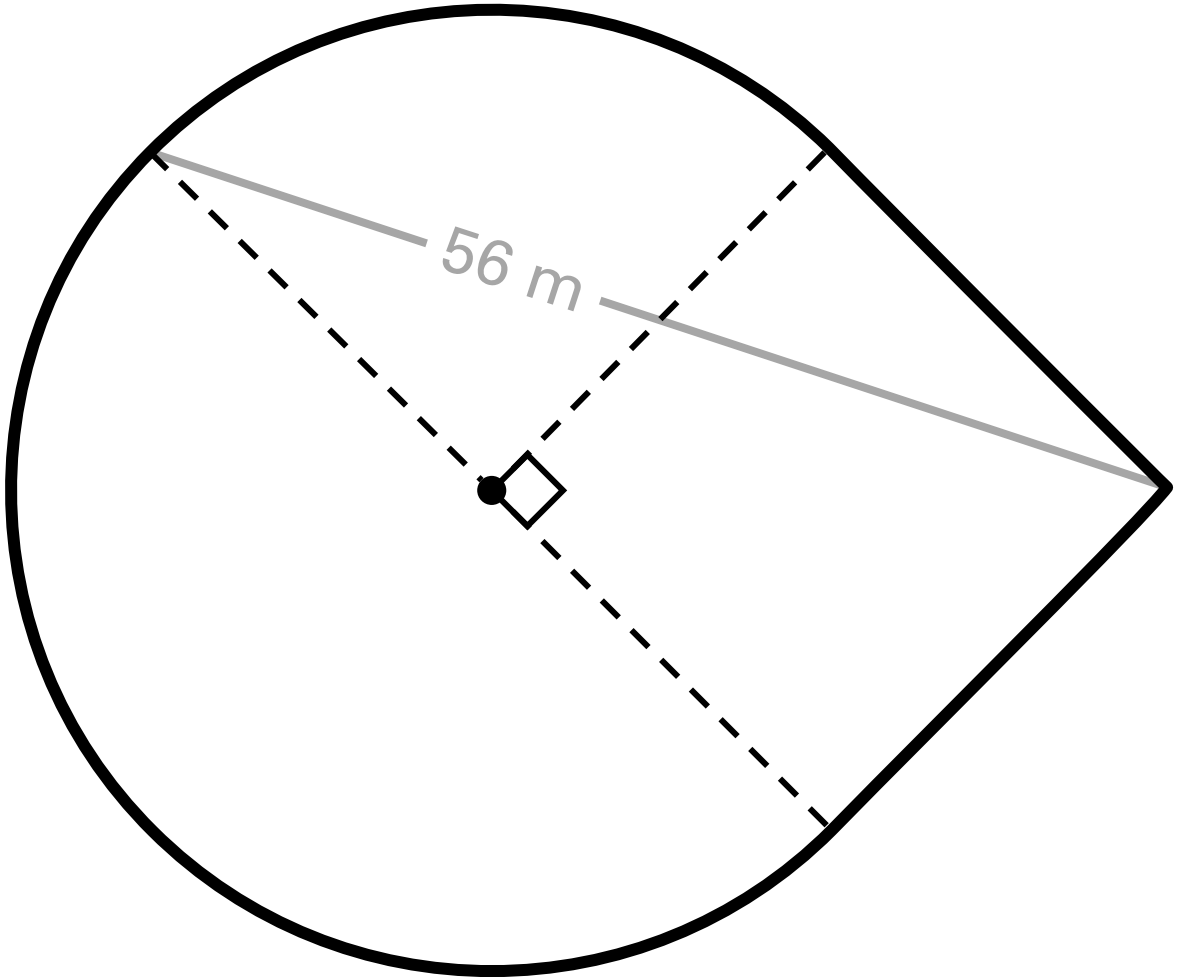
$X =$ **20 m** or 15 m

$x = 2 \times 20 = 40$ m

**The Millennium Falcon** Find the area.



**The Millennium Falcon** Find the area.



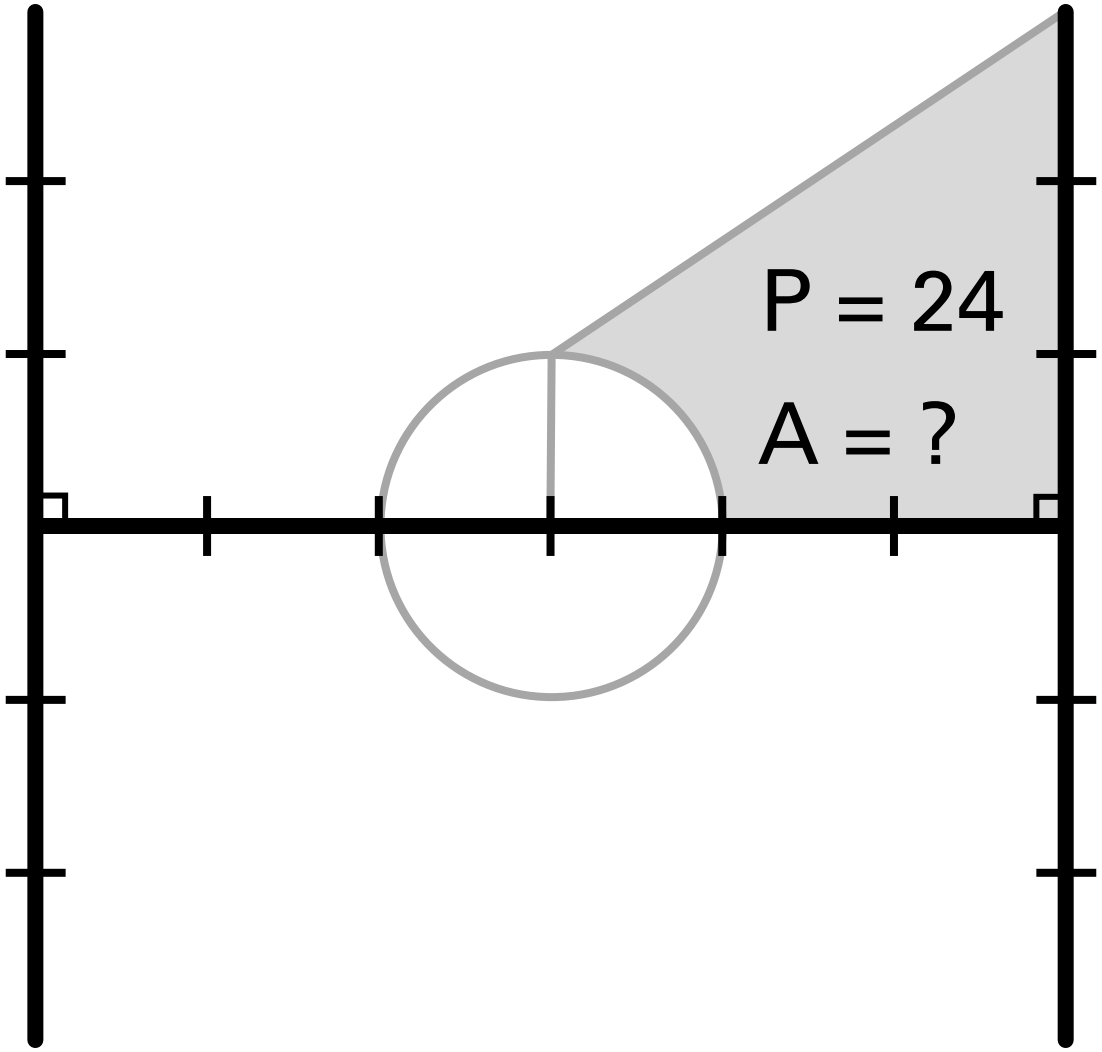

$$56^2 = r^2 + (2r)^2 = 5r^2$$

$$r^2 = \frac{56^2}{5}$$

$$\text{Area} = \frac{3}{4}\pi r^2 + r^2$$
$$= \left(\frac{3}{4}\pi + 1\right) \times \frac{56^2}{5}$$
$$= 2105.005$$
$$= 2105\ (4\ sf)$$

**Area = 2105**

# The Tie Fighter



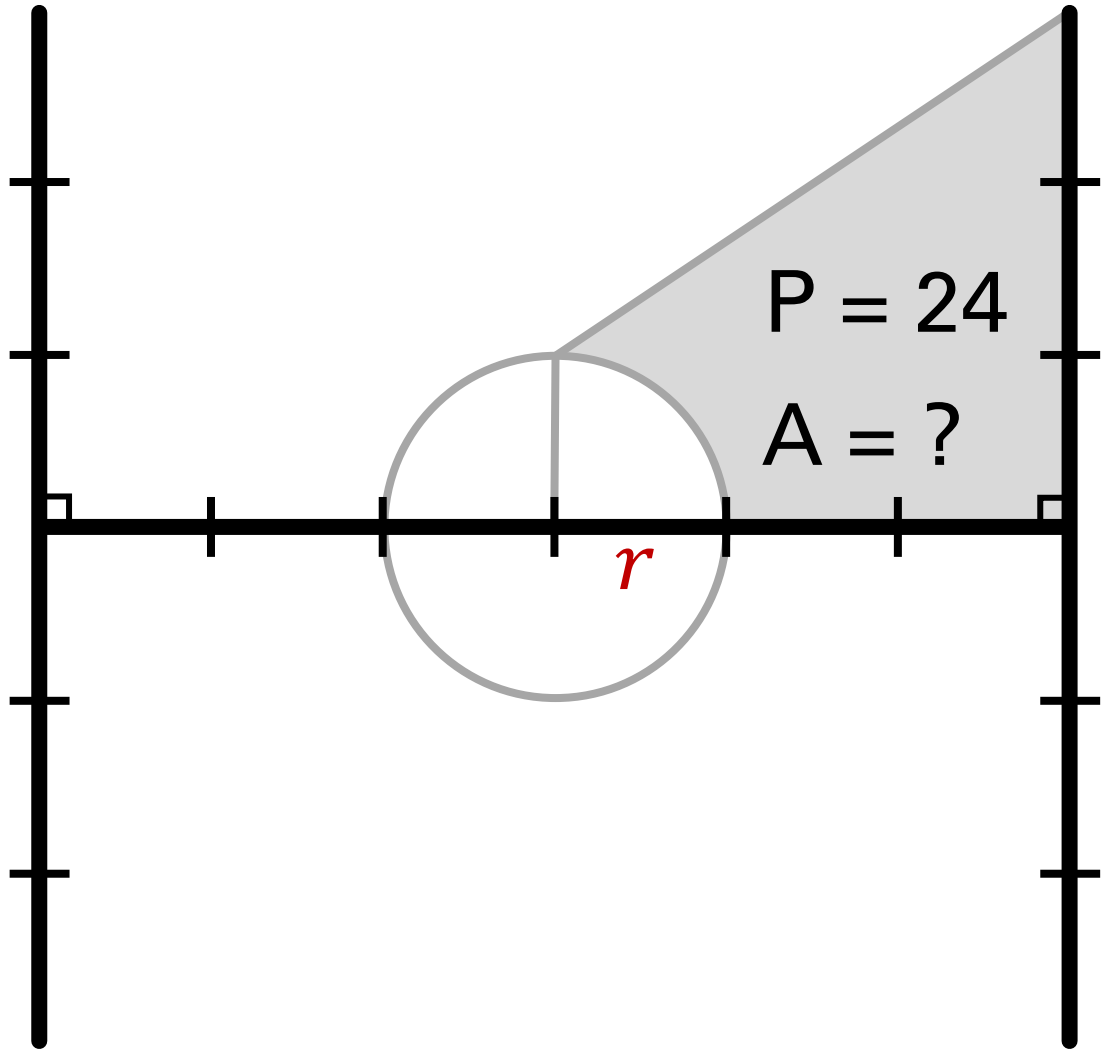
# The Tie Fighter

$$24 = 5r + \frac{2\pi r}{4} + \sqrt{(2r)^2 + (3r)^2}$$
$$= \left(5 + \frac{\pi}{2} + \sqrt{13}\right) r$$

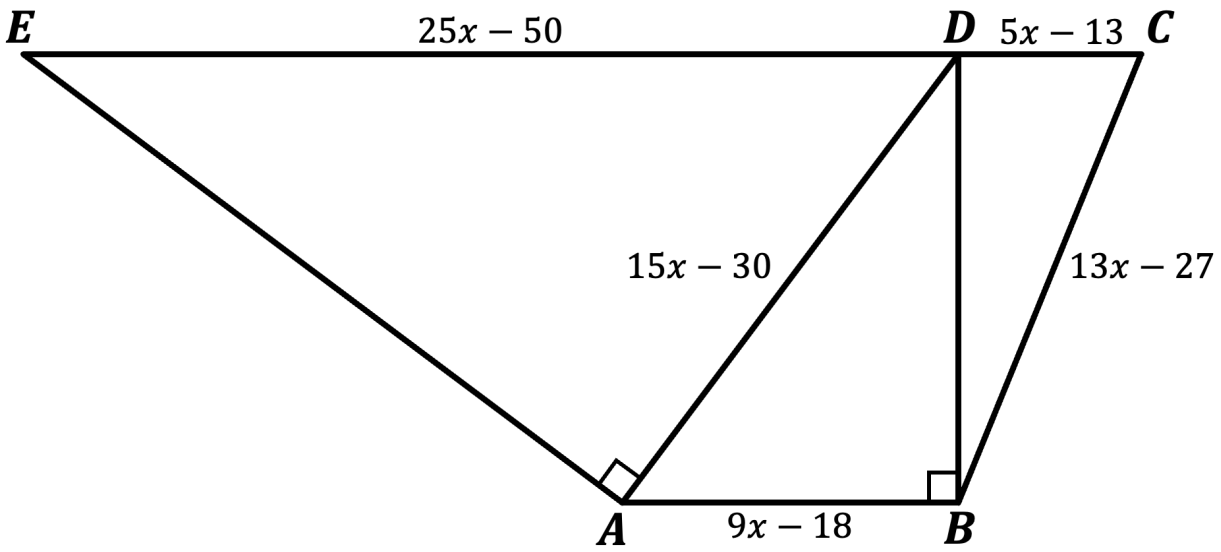
$$r = \frac{24}{5 + \frac{\pi}{2} + \sqrt{13}} = 2.36$$

$$A = \frac{1}{2}(3r + r) \times 3r - \frac{1}{4}\pi r^2$$
$$= \left(6 - \frac{\pi}{4}\right) r^2$$
$$= 29.004$$
$$= 29 \ (2\ sf)$$

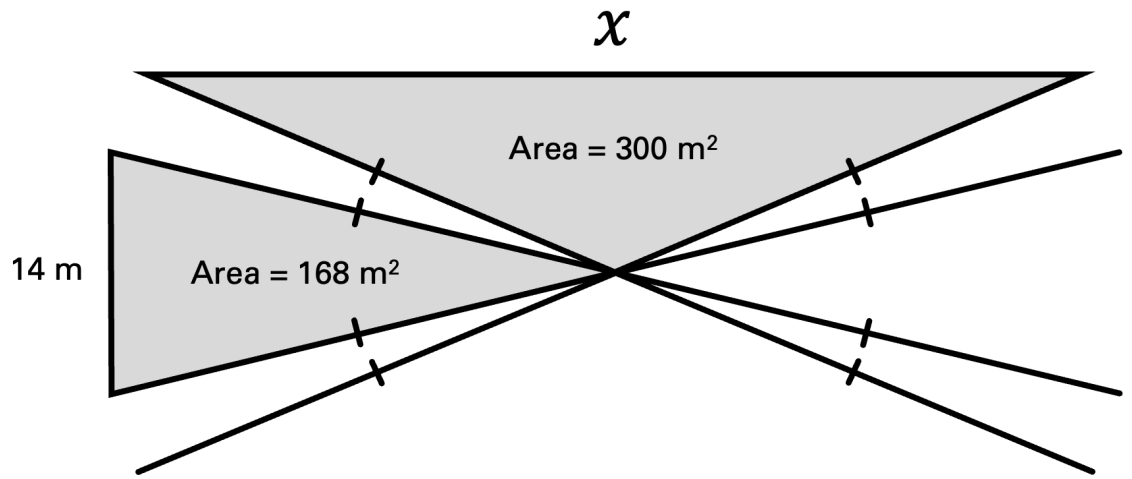
**Area = 29**



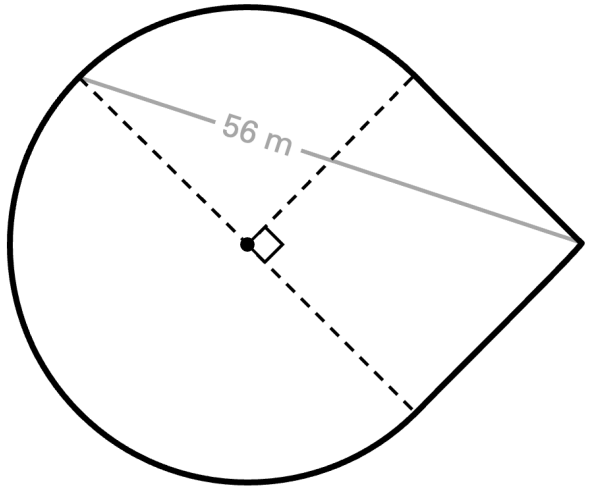
**The Sandcrawler** Find the area and perimeter of $ABCE$.



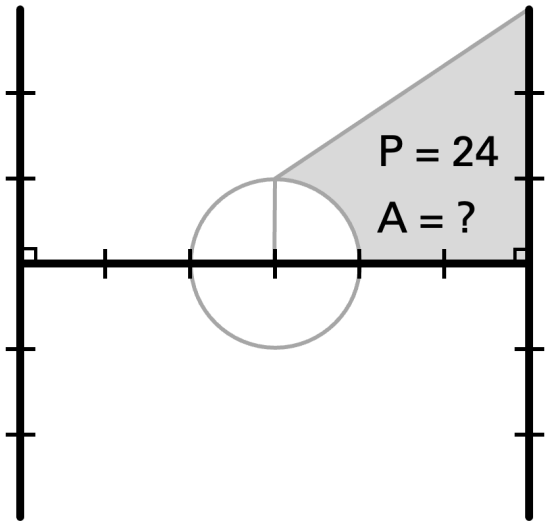

**The $x$-Wing**



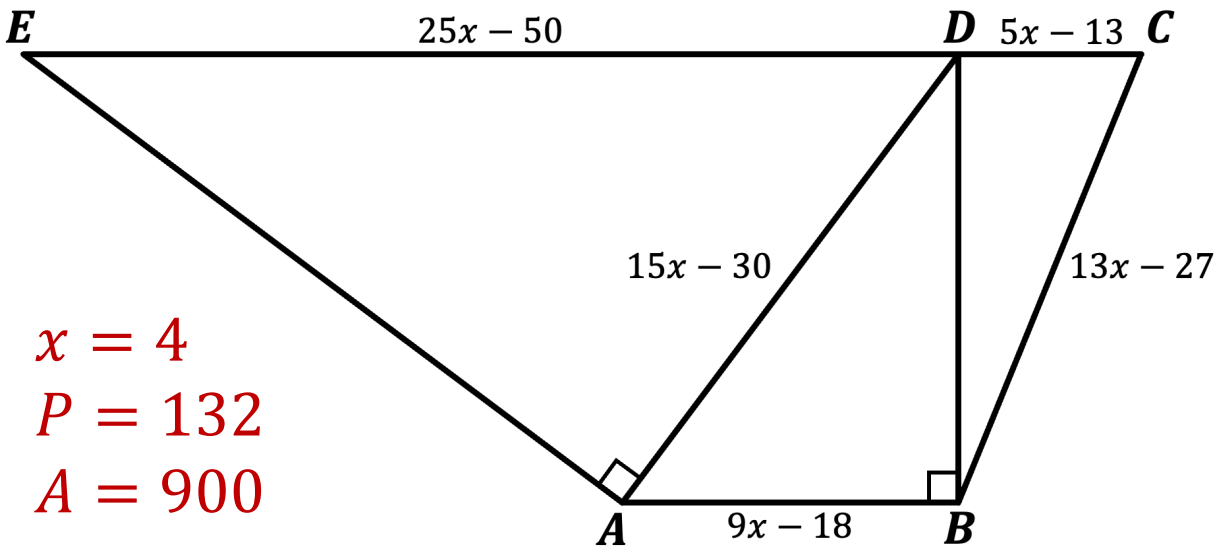

**The Millennium Falcon** Find the area.




**The Tie Fighter**

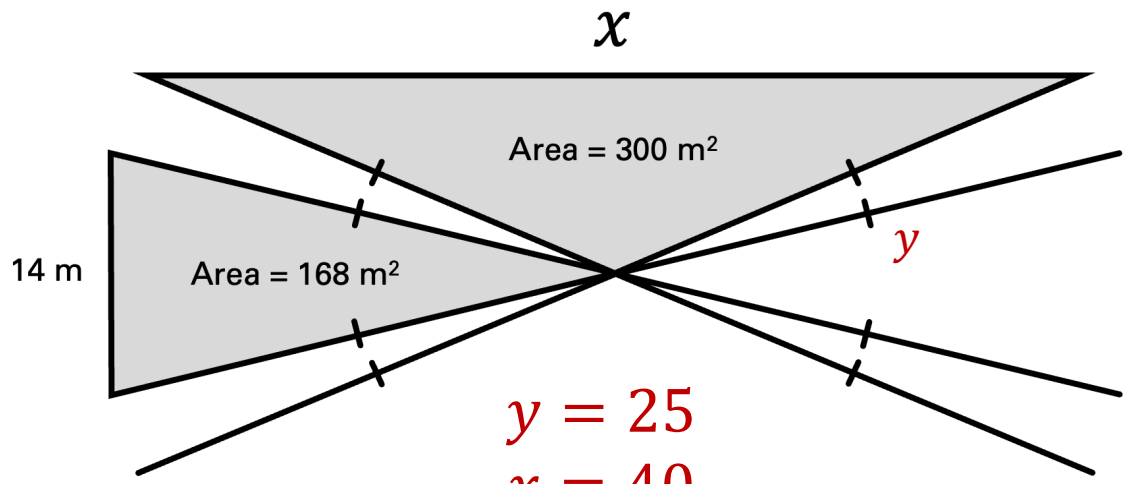


**The Sandcrawler** Find the area and perimeter of $ABCE$.



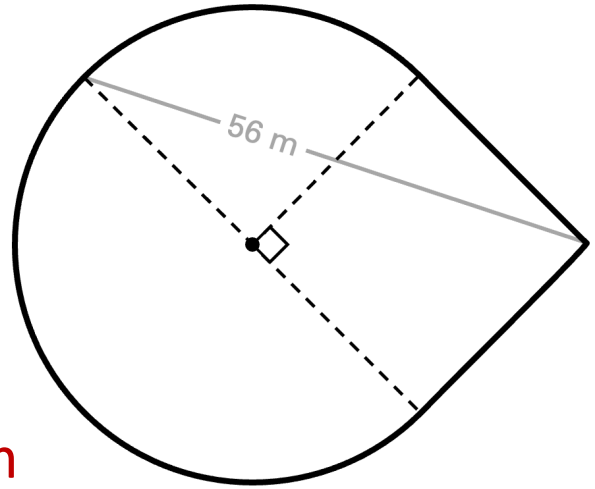

$x = 4$
$P = 132$
$A = 900$

**The $x$-Wing**



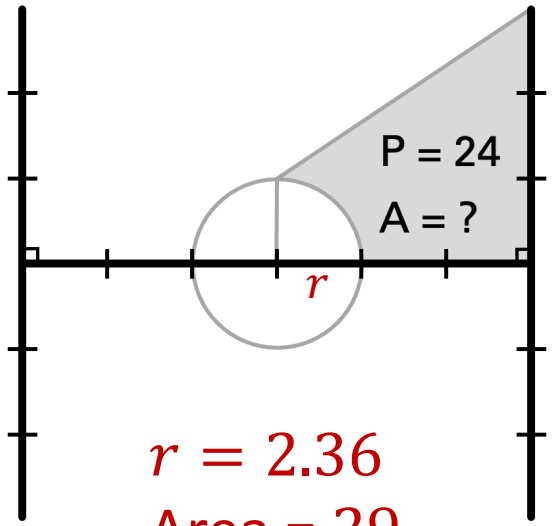

$y = 25$
$x = 40$

**The Millennium Falcon** Find the area.




$r = 25.0$ m
Area = 2105 m²

**The Tie Fighter**




$r = 2.36$
Area = 29