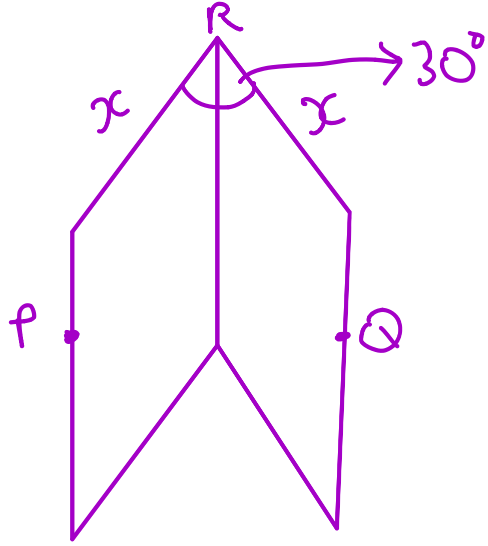
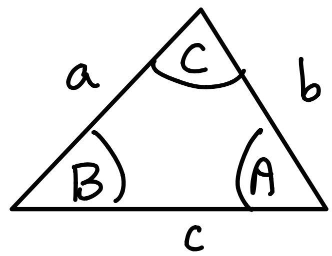


This shape is created from 2 congruent parallelograms.

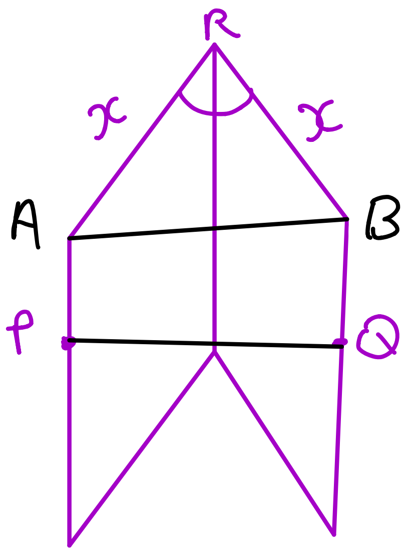
$RP = RQ = 10$

Find $\cos(\angle PRQ)$ in terms of x.

Firstly, recall the Cosine Rule:



$$c^2 = a^2 + b^2 - 2ab\cos(C)$$



We have $PQ = AB$ (translation)

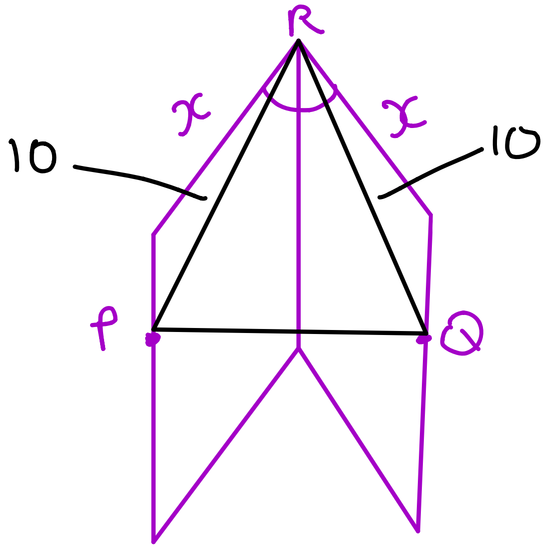
Now, consider the triangle $\triangle ABR$. We can apply the Cosine Rule:

$$AB^2 = x^2 + x^2 - 2(x)(x)\cos(30°)$$

$$\Rightarrow PQ^2 = 2x^2 - 2x^2 \cdot \frac{\sqrt{3}}{2}$$

$$= x^2(2-\sqrt{3})$$

Now let us consider the triangle $\triangle PRQ$:



Applying the Cosine Rule, we see that

$$PQ^2 = 10^2 + 10^2 - 2(10)(10)\cos(\angle PRQ)$$

$$= 200 - 200\cos(\angle PRQ)$$

We now equate the two expressions we have found for PQ^2:

$$x^2(2-\sqrt{3}) = 200 - 200\cos(\angle PRQ)$$

$$\Rightarrow \cos(\angle PRQ) = 1 - \frac{x^2(2-\sqrt{3})}{200}$$