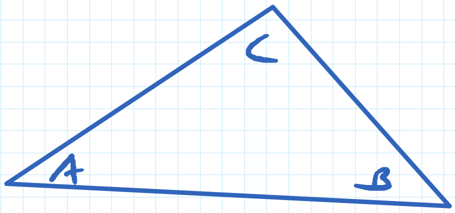
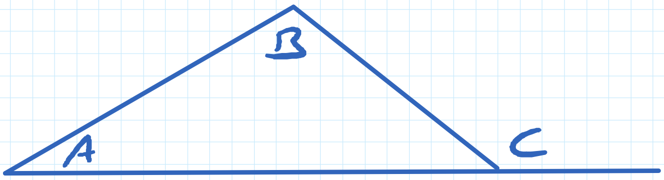
Triangles.



$A + B + C = 180°$

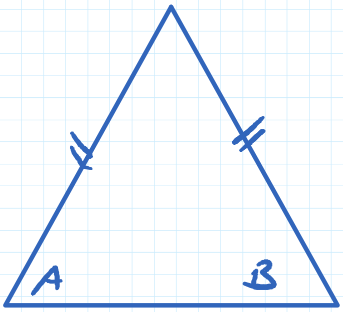
Angles of a Δ sum to 180°

Δ = triangle



$C = A + B$

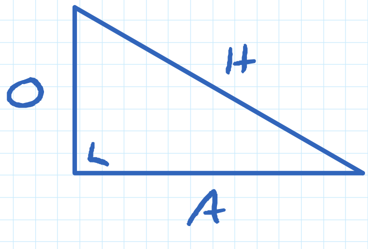
Exterior = sum of interior opposite angles



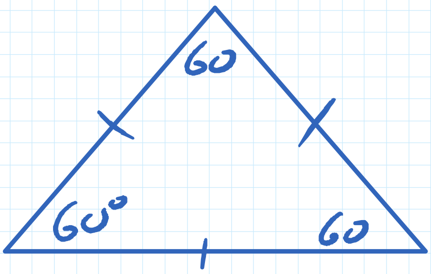
Base angle of isosceles Δ are equal

converse

If two angles are equal the triangle is isosceles.

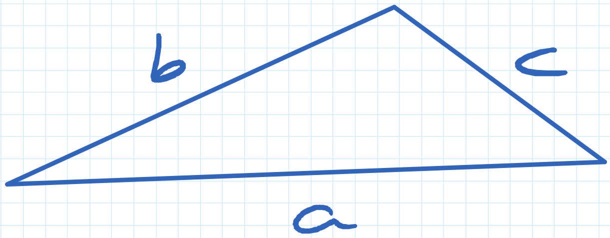


$H^2 = O^2 + A^2$



Equilateral = all sides and angles are equal.

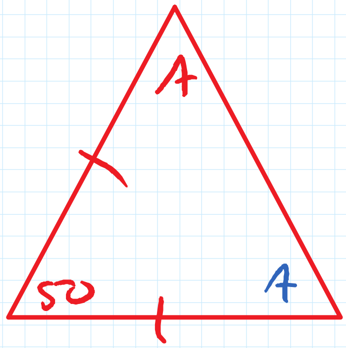
Area = base x height



$a + b > c$

$b + c > a$

$a + c > b$

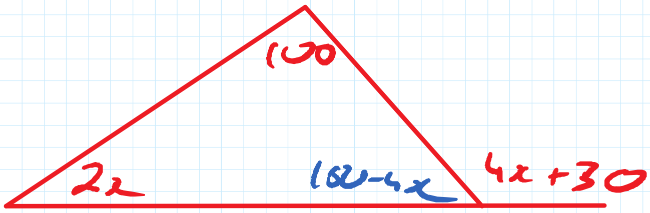


Find A.

$2A + 50 = 180$

$2A = 130$

$A = 65$



Find x.

$180 - (4x + 30)$

$180 - 4x - 30$

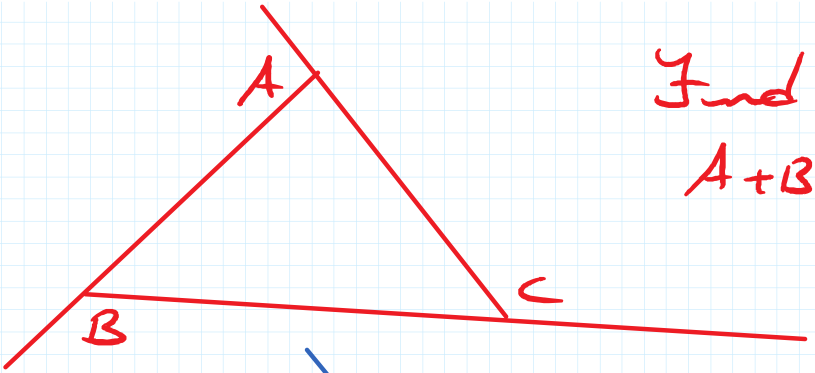
$4x + 30 = 2x + 100$

$2x = 70$

$x = 35°$

Find

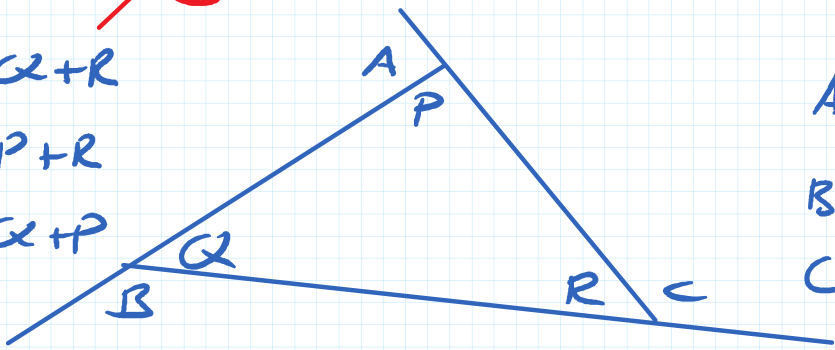
$A + B + C$



$A = Q + R$

$B = P + R$

$C = Q + P$



$A + P = 180^\circ$

$B + Q = 180$

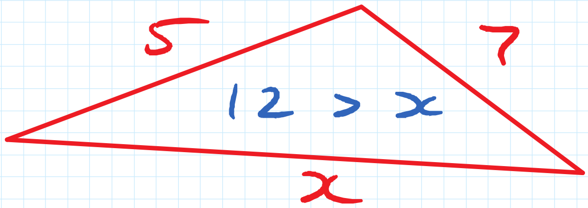
$C + R = 180^\circ$

$A + B + C = 360$

$A + B + C + P + Q + R = 540$

$P + Q + R = 180^\circ$

$A + B + C + 180 = 540$



Find possible range of values of x

$5 + 7 > x$

$\cancel{x + 7 > 5}$

$\cancel{x > -2}$

$x + 5 > 7$

$x > 2$

$2 < x < 12$

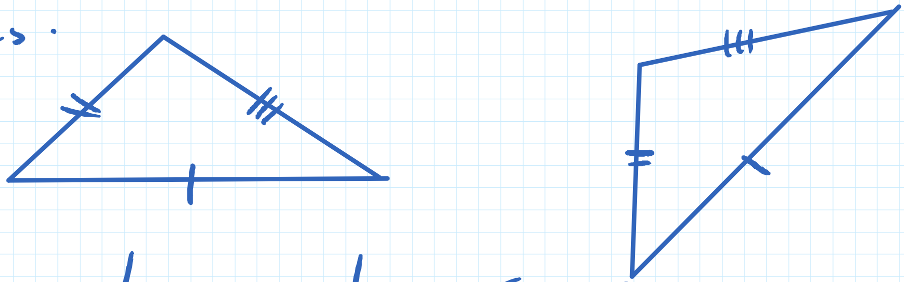
Congruent Triangles.

Triangle which are the same in every way.

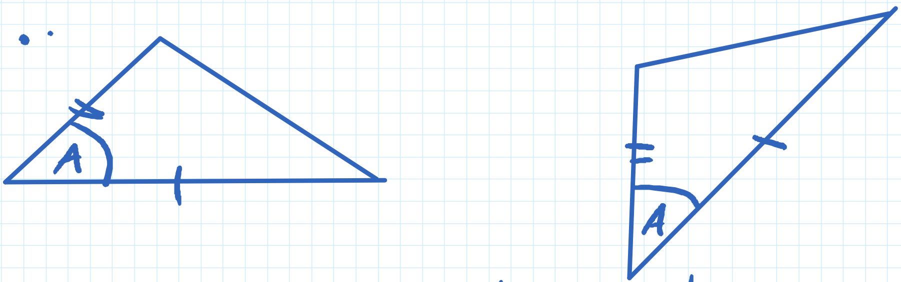
Corresponding (i) lengths
(ii) Angles are the same.

Areas are equal.

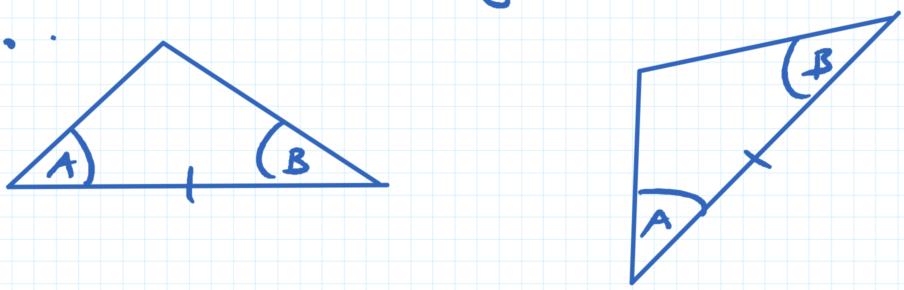
Reasons:



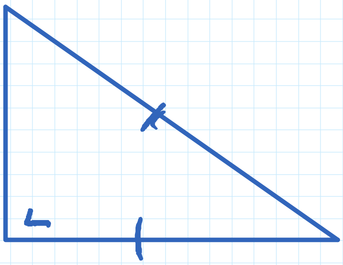
Side - side - side = S.S.S.

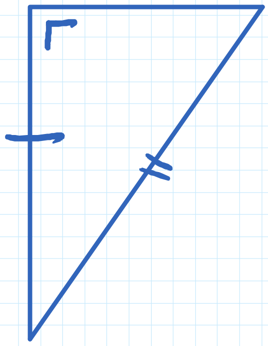


Side - angle - side = S.A.S



Angle - side - angle = ASA





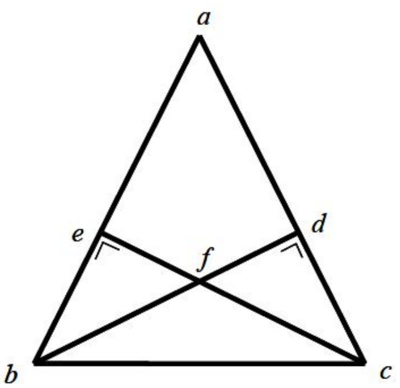
Right - hypotenuse - side = RHS.

The triangle abc is an isosceles triangle, with $|ab| = |ac|$ and $|\angle bec| = |\angle cdb| = 90°$.

The lines ec and bd intersect at f.

(i) Prove $|\angle dbc| = |\angle ecb|$.

(ii) Prove $|ef| = |fd|$.



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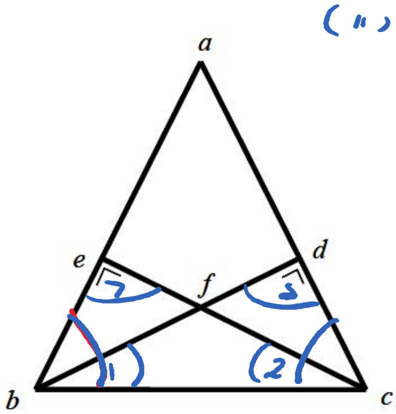
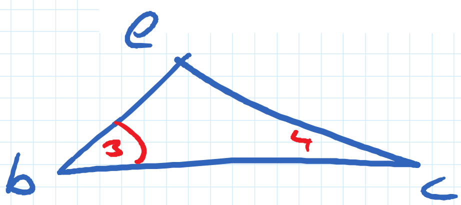
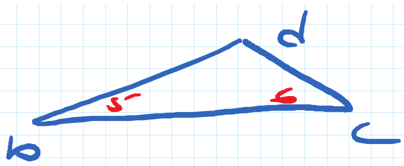
(ii) Prove $|ef| = |fd|$.

(ii)



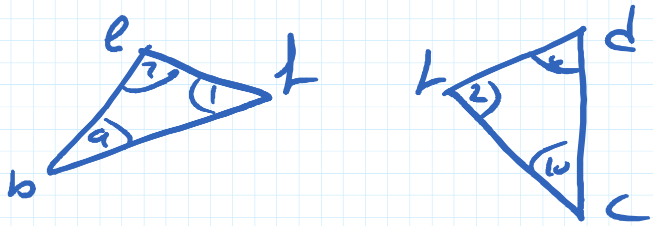




$|bc| = |bc|$

$|\angle 3| = |\angle 6|$ $\quad |\angle 7| = |\angle 8| = 90°$

$(|\angle 1| = |\angle 2|$ $= 3^{rd}$ angles of $\triangle$



$|\angle 1| = |\angle 2|$

$|\angle 7| = |\angle 8|$

$|\angle 9| = |\angle 10|$

$|eb| = |dc|$

ASA.