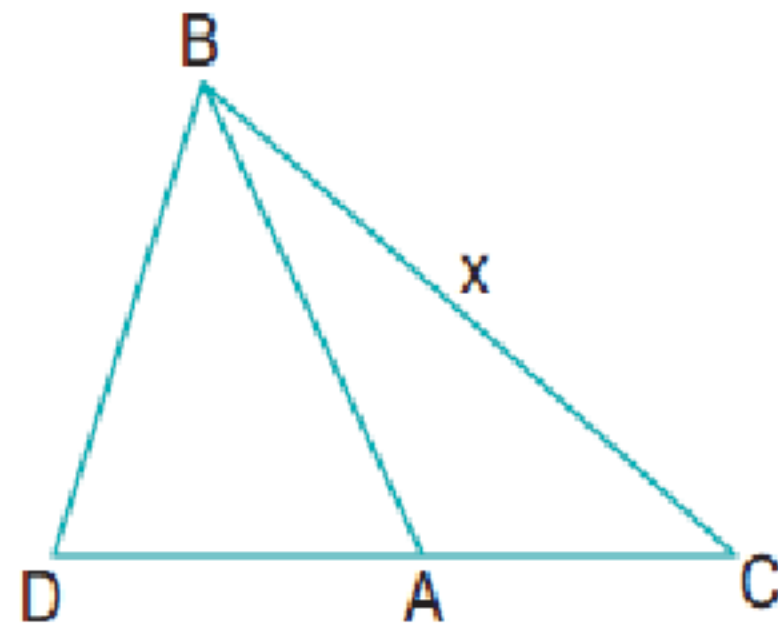




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- Luis Quiroz Bernilla

Del gráfico:



I. $m\angle A = 143^\circ$

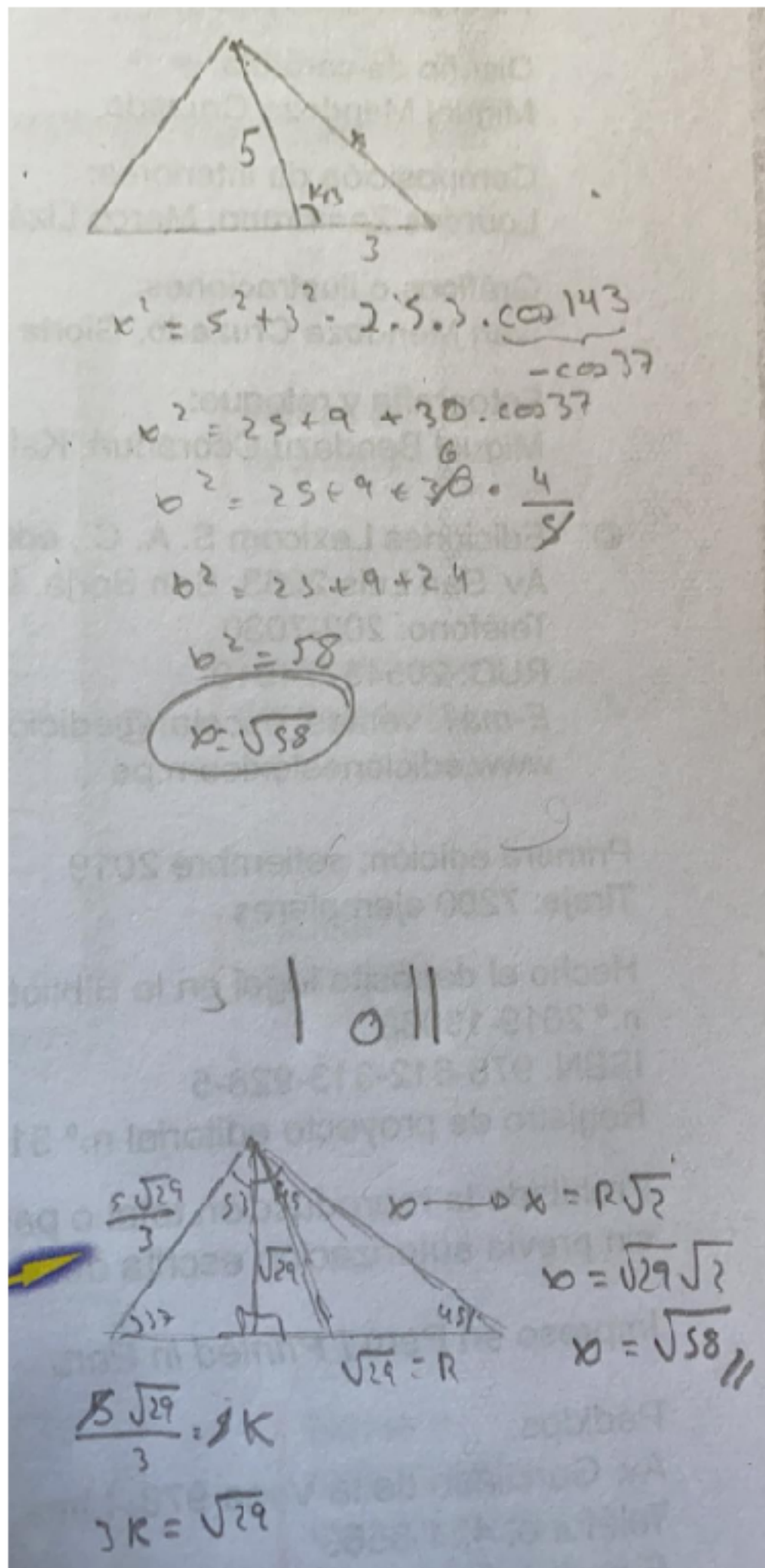
$AB = 5 \wedge AC = 3$

II. $m\angle D = 37^\circ \wedge m\angle C = 45^\circ$

$BD = \frac{5}{3}\sqrt{29}$

Para hallar el valor de x , es necesario:

- A) Solo II
- B) Solo I
- C) I y II
- D) I o II
- E) Son necesarios más datos

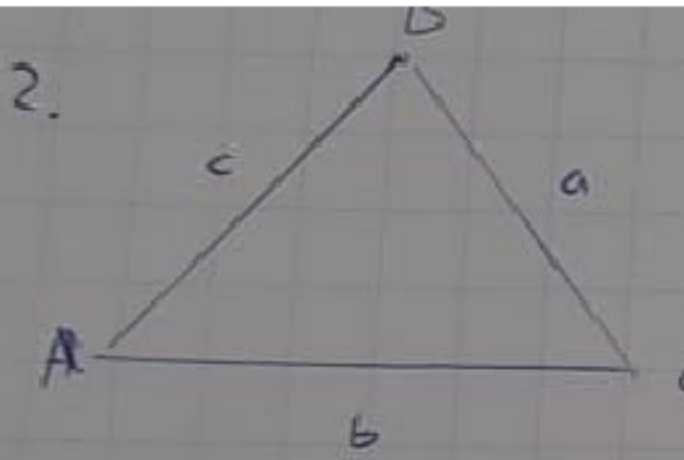


En un triángulo ABC, se tiene que:

$$\frac{\text{sen}A}{2} = \frac{\text{sen}B}{3} = \frac{\text{sen}C}{4}$$

Halla el valor de: $J = \frac{b^2 + c^2}{b^2 - a^2}$

2.


$$\frac{\text{sen} A}{2} = \frac{\text{sen} B}{3} = \frac{\text{sen} C}{4}$$
$$\frac{\text{sen} A}{2} = \frac{\text{sen} B}{3} \quad \frac{a}{\text{sen} A} = \frac{b}{\text{sen} B} = \frac{c}{\text{sen} C} \quad a = 2, b = 3, c = 4$$
$$\frac{\text{sen} A}{\text{sen} B} = \frac{2}{3} \quad \frac{a}{\text{sen} A} = \frac{b}{\text{sen} B} \quad J = \frac{b^2 + c^2}{b^2 - a^2}$$
$$\frac{\text{sen} B}{3} = \frac{\text{sen} C}{4} \quad \frac{a}{b} = \frac{\text{sen} A}{\text{sen} B} \quad J = \frac{9 + 16}{9 + 4}$$
$$\frac{\text{sen} B}{\text{sen} C} = \frac{3}{4} \quad \frac{b}{\text{sen} B} = \frac{c}{\text{sen} C} \quad J = 5$$
$$\frac{b}{c} = \frac{\text{sen} B}{\text{sen} C}$$

Dado un triángulo ABC, donde:

$$\frac{a}{\cos A} = \frac{b}{\cos B} = \frac{c}{\cos C}$$

Determina que tipo de triángulo es:


- A) Rectángulo
- B) Isósceles
- C) Escaleno
- D) Equilátero
- E) FD

③

$\frac{a}{\sin A} = \frac{b}{\sin B}$	$\frac{a}{\cos A} = \frac{b}{\cos B}$	$\frac{\sin A}{\sin B} = \frac{\cos A}{\cos B}$	$\tan A = \tan B = \tan C$
$\frac{\sin A}{\sin B} = \frac{a}{b}$	$\frac{\cos A}{\cos B} = \frac{a}{b}$	$\tan A = \tan B$	$A = B = C = 60^\circ$
$\frac{a}{\sin A} = \frac{c}{\sin C}$	$\frac{a}{\cos A} = \frac{c}{\cos C}$	$\frac{\sin A}{\sin C} = \frac{\cos A}{\cos C}$	\downarrow
		$\tan A = \tan C$	Equilátero

Los lados de un triángulo son tres números impares consecutivos y su mayor ángulo mide 120° . Calcula cuánto mide el lado mayor.

4.



$$(a+4)^2 = (a+2)^2 + a^2 - 2a(a+2) \cos 120$$

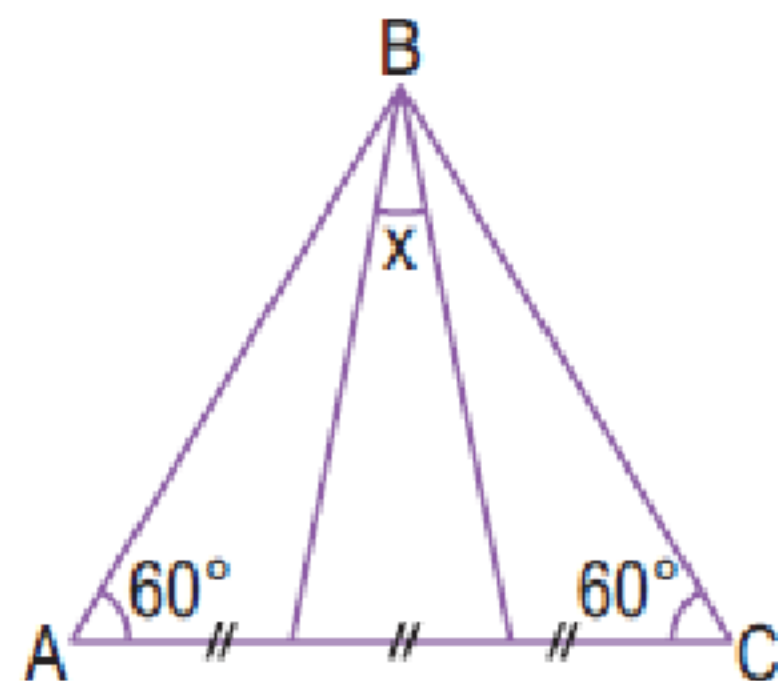
$$(a^2 + 8a + 16) = 2a^2 + 4a + 4 - 2(a^2 + 2a) \left(-\frac{1}{2}\right)$$

$$a^2 + 8a + 16 = 2a^2 + 4a + 4 + a^2 + 2a$$

$$2a^2 - 2a = 12$$

$0 = 2a^2 - 10a - 12$ $\begin{array}{r} 2a \\ \times \\ \hline a \end{array} \begin{array}{r} 4 \\ -3 \end{array}$	$a - 3 = 0$ $a = 3$	$a+4 = 3+4 = 7$
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Calcula $\cos x$ de la figura.



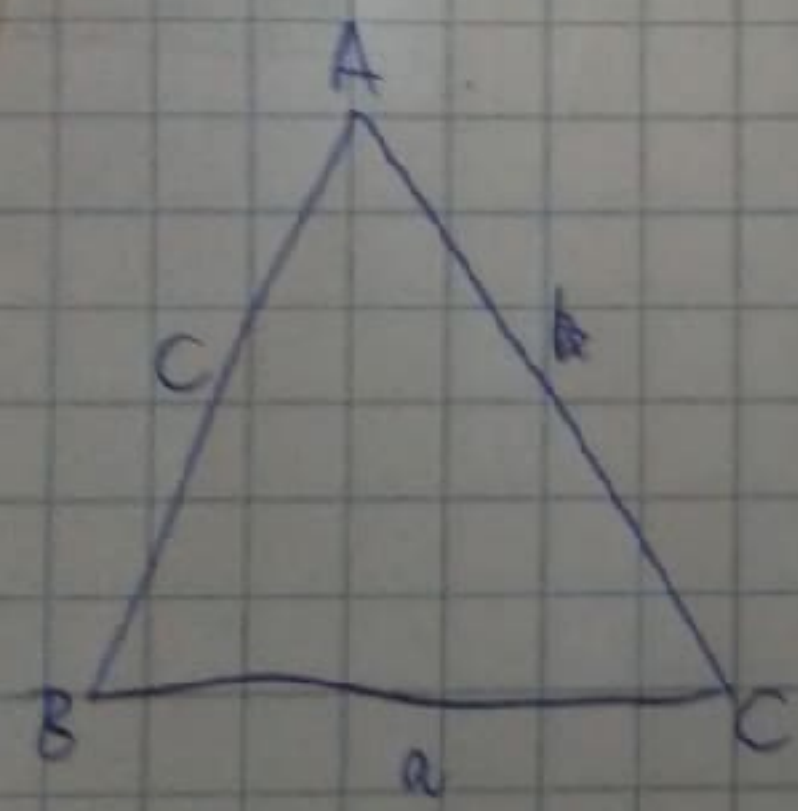
En un triángulo ABC , se tiene que: $a = 5b$
y $m\angle C = 120^\circ$. Calcula: $\csc^2(A - B)$.

En un triángulo ABC se cumple:

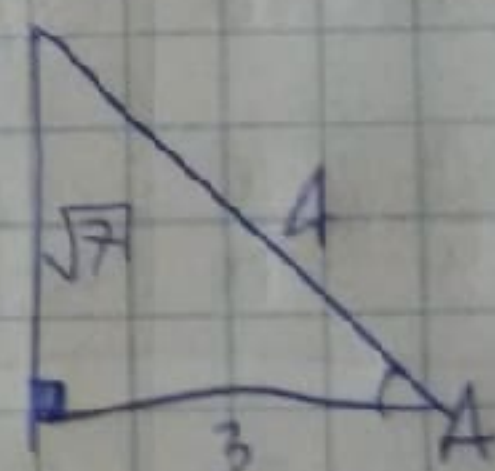
$$a^2 = b^2 + c^2 - \frac{3}{2}bc$$

Calcula: $\text{sen}A$

⑤ $a^2 = b^2 + c^2 - \frac{3bc}{2}$

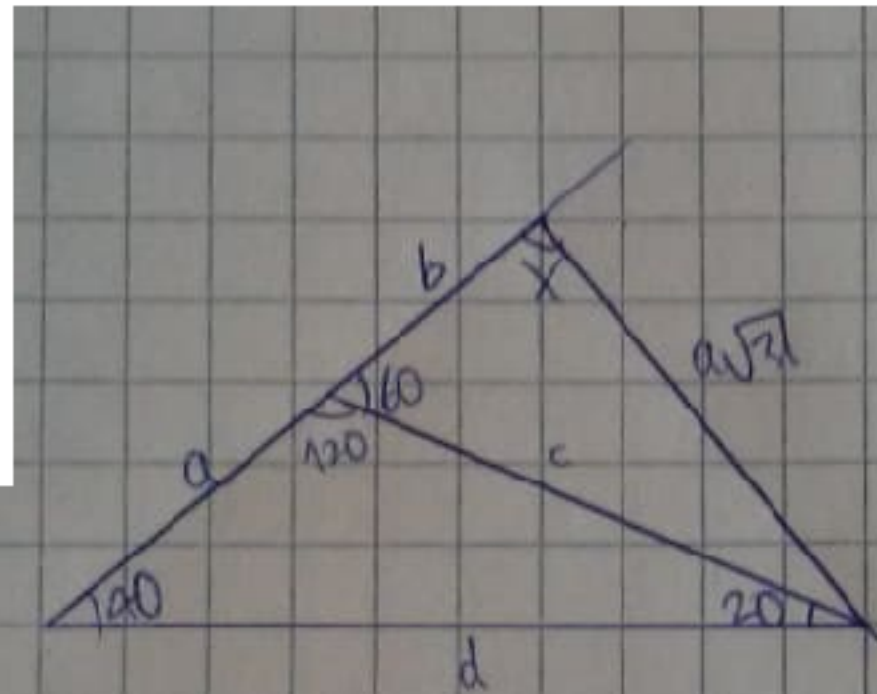
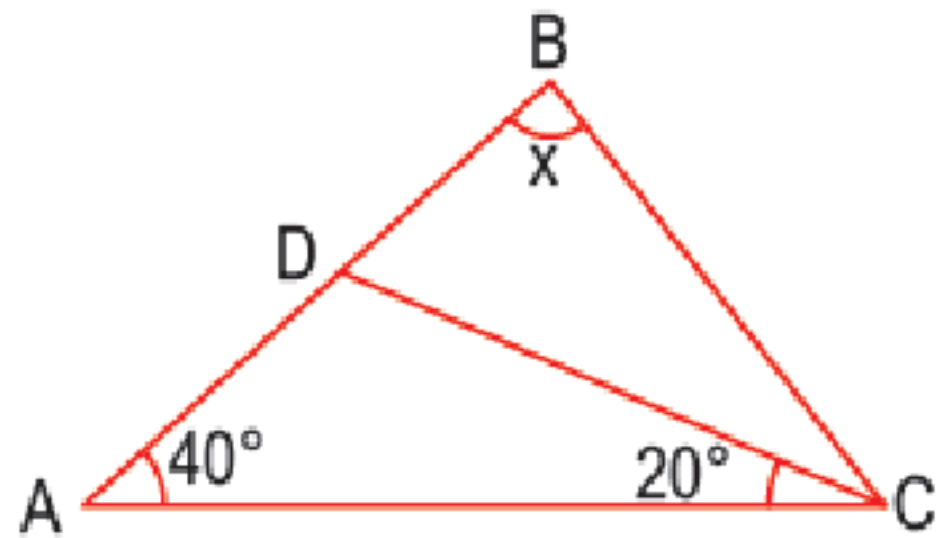


$a^2 = b^2 + c^2 - 2bc \cos A$
 $a^2 - b^2 - c^2 = -2bc \cos A$
 $-\frac{3bc}{2} = -2bc \cos A$
 $\frac{3}{4} = \cos A$
 $\frac{3}{4} = \cos A$



$\text{sen}A = \frac{\sqrt{7}}{4}$

Calcula x , si: $BC = \sqrt{3} AD$



$$\frac{c}{\text{sen } 40} = \frac{a}{\text{sen } 20}$$

$$\frac{c}{2 \text{sen } 20 \cos 20} = \frac{a}{\text{sen } 20}$$

$$\frac{c}{2 \cos 20} = a$$

$$\frac{a\sqrt{3}}{\text{sen } 60} = \frac{c}{\text{sen } X}$$

$$\frac{a\sqrt{3}}{\frac{\sqrt{3}}{2}} = \frac{c}{\text{sen } X}$$

$$2a \text{sen } X = c$$

$$\frac{2a \text{sen } X}{2 \cos 20} = a$$

$$\text{sen } X = \cos 20$$

$$\text{sen } X = \text{sen } 70$$

$$X = 70$$