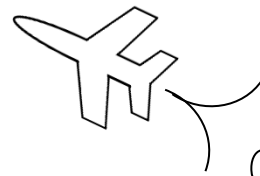


# MAth on the Fly!

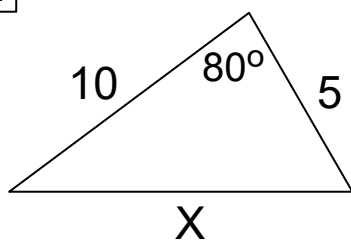


NAME: \_\_\_\_\_ DATE: \_\_\_\_\_

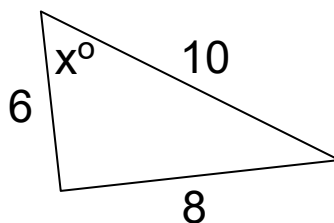
## The Law of Cosines

Find the missing side or angle in each problem.

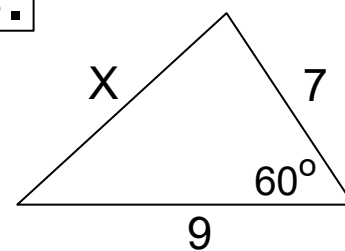
1.



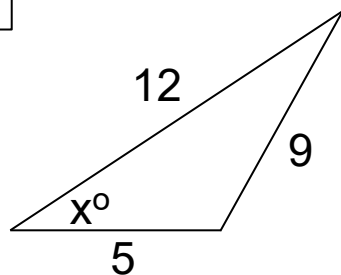
2.



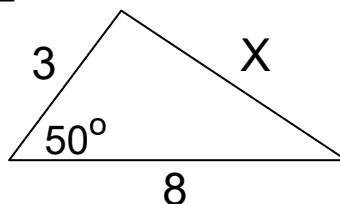
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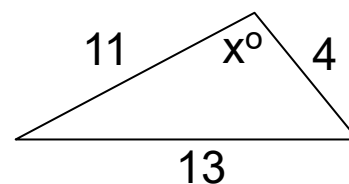
4.



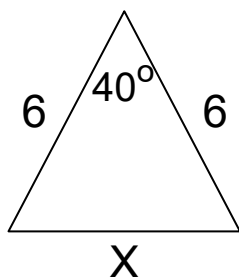
5.



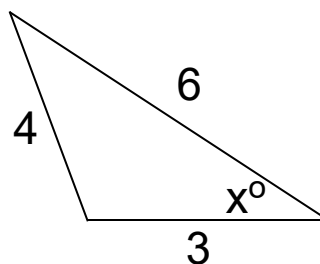
6.



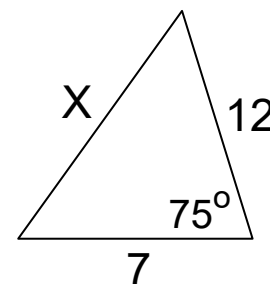
7.



8.



9.



## SOLUTIONS

$$\boxed{1.} \quad x = \sqrt{5^2 + 10^2 - 2(5)(10)\cos 80^\circ}$$
$$\approx 10.37$$

$$\boxed{2.} \quad \angle X = \cos^{-1}\left(\frac{8^2 - 6^2 - 10^2}{-2(6)(10)}\right)$$
$$\approx 53.1^\circ$$

$$\boxed{3.} \quad x = \sqrt{7^2 + 9^2 - 2(7)(9)\cos 60^\circ}$$
$$\approx 8.19$$

$$\boxed{4.} \quad \angle X = \cos^{-1}\left(\frac{9^2 - 5^2 - 12^2}{-2(5)(12)}\right)$$
$$\approx 42.8^\circ$$

$$\boxed{5.} \quad x = \sqrt{3^2 + 8^2 - 2(3)(8)\cos 50^\circ}$$
$$\approx 6.49$$

$$\boxed{6.} \quad \angle X = \cos^{-1}\left(\frac{13^2 - 4^2 - 11^2}{-2(4)(11)}\right)$$
$$\approx 111.3^\circ$$

$$\boxed{7.} \quad x = \sqrt{6^2 + 6^2 - 2(6)(6)\cos 40^\circ}$$
$$\approx 4.10$$

$$\boxed{8.} \quad \angle X = \cos^{-1}\left(\frac{4^2 - 3^2 - 6^2}{-2(3)(6)}\right)$$
$$\approx 36.3^\circ$$

$$\boxed{9.} \quad x = \sqrt{7^2 + 12^2 - 2(7)(12)\cos 75^\circ}$$
$$\approx 12.23$$