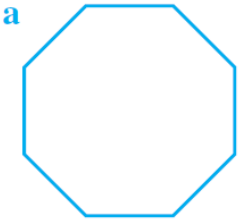
2 State whether each polygon is convex or non-convex.

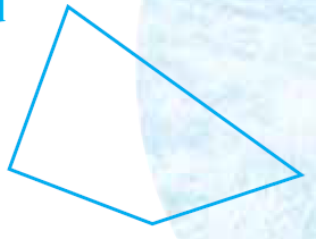
a



b

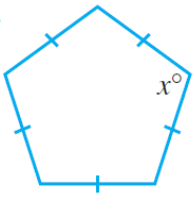
c

d

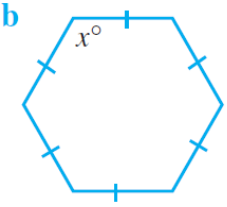


11 Use your formula from Q10 to find the angle sum of each of these regular polygons. Hence, find the value of x.

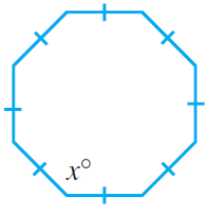
a



b

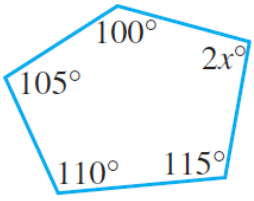


c

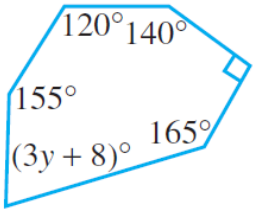


14 Form an equation and solve it to find the value of the pronumeral in each polygon.

a



b

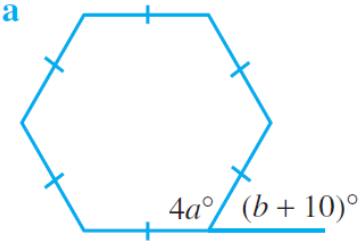


18 How many sides are there in a regular polygon whose exterior angles each measure:

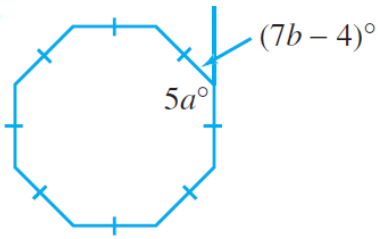
a 120°? **b** 72°? **c** 30°? **d** 12°?

19 Find values for a and b in each of these regular polygons.

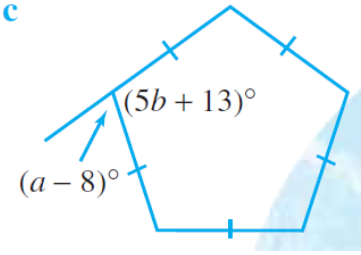
a



b

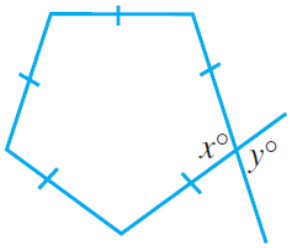


c

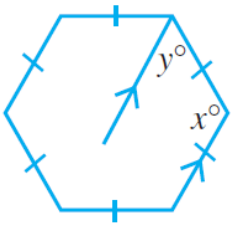


20 Find values for x and y, giving reasons. All polygons are regular.

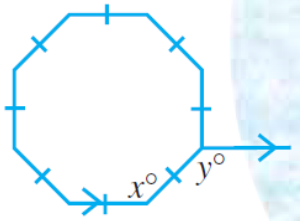
a



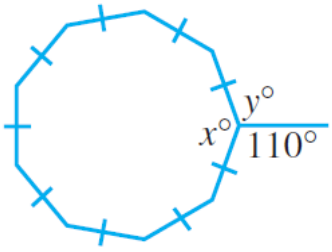
b



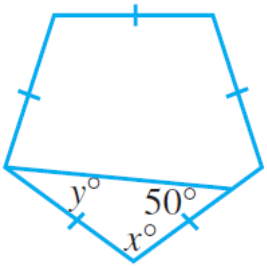
c



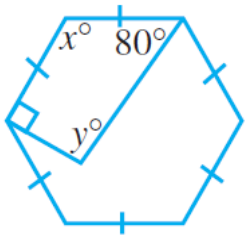
d



e



f



Pythagoras (c. 580–500 BC) formed a secret society among his followers for the study of mathematics. The penalty for revealing secrets of the society was death. The Pythagoreans had their own special sign—by extending the sides of a regular pentagon, a five-pointed star was formed. This was believed to have magical mathematical properties.

What is the size of the angles at the points of the star?