(In this section, there are 3 case study/passage based questions. Each question is of 4 marks.)

Case Study

36. The discus throw is an event in which an athlete attempts to throw a discus. The athlete spins anti-clockwise around one and a half times through a circle, then releases the throw. When released, the discus travels along tangent to the circular spin orbit.

Tangent line
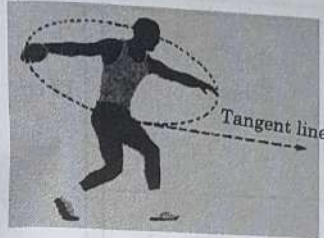
In the given figure, AB is one such tangent to a circle of radius 75 cm. Point O is centre of the circle and $\angle ABO = 30°$. PQ is parallel to OA.
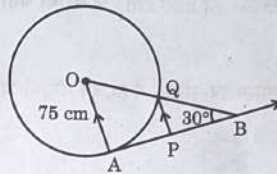
Based on above information :

(a) find the length of AB.   1

(b) find the length of OB.   1

(c) find the length of AP.   2

OR

find the length of PQ.