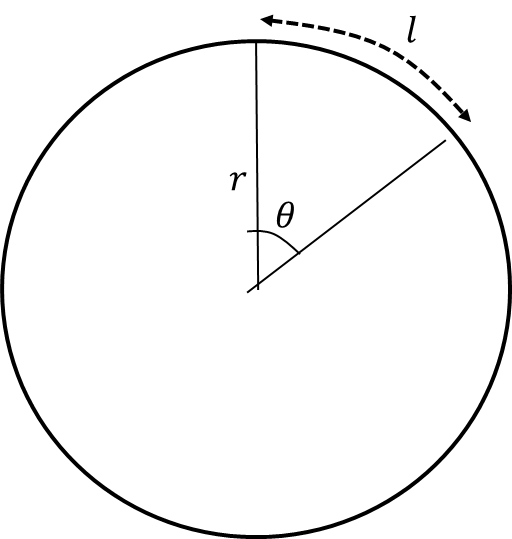
Arc length

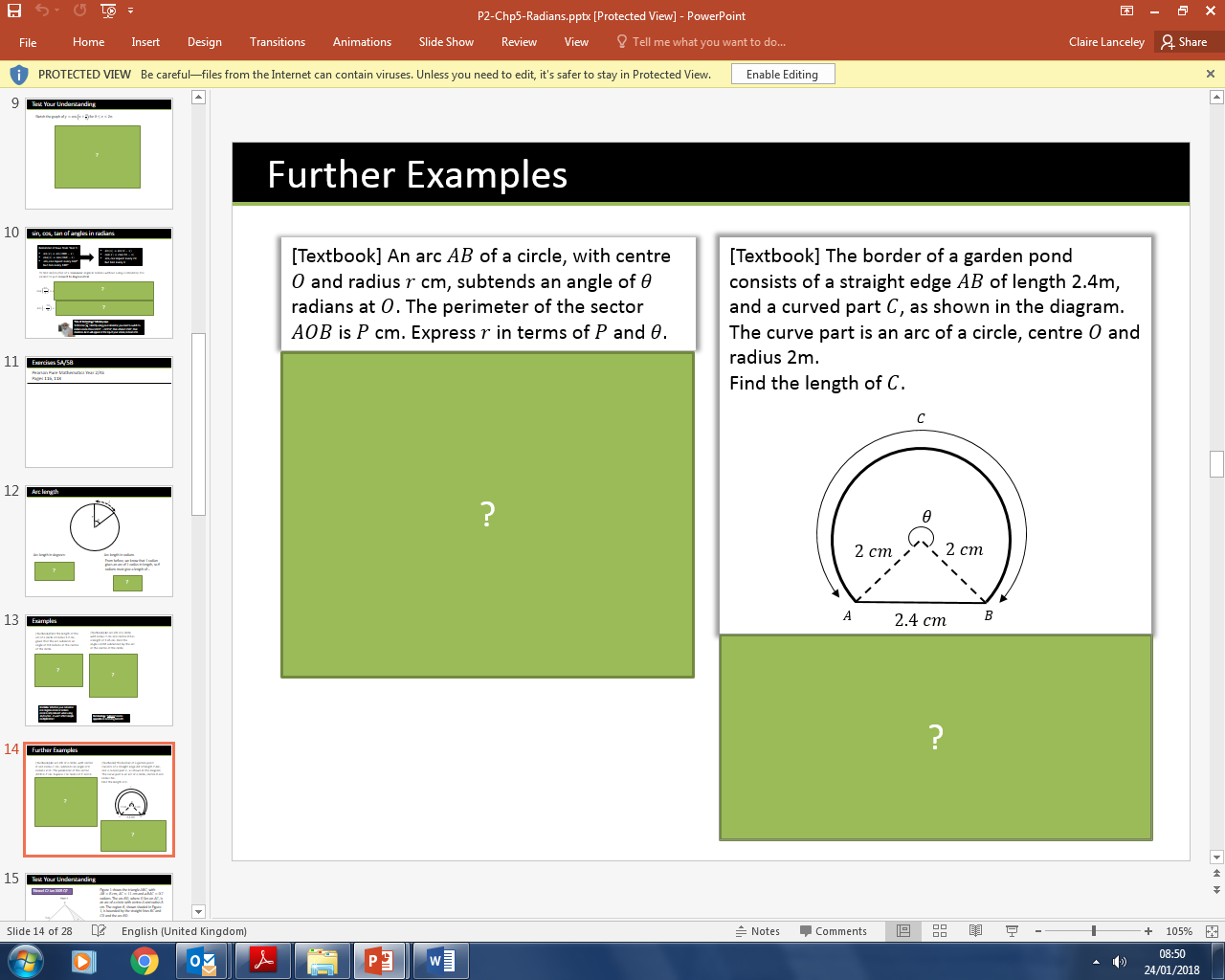


Arc length in degrees =

Arc length in radians =

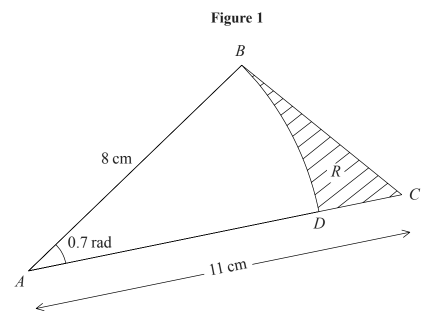
Examples

1. Find the length of the arc of a circle of radius 5.2 cm, given that the arc subtends an angle of 0.8 radians at the centre of the circle.
2. An arc of a circle with radius 7 cm and centre has a length of 2.45 cm. Find the angle subtended by the arc at the centre of the circle
3. An arc of a circle, with centre and radius cm, subtends an angle of radians at . The perimeter of the sector is cm. Express in terms of and
4. The border of a garden pond consists of a straight edge of length 2.4m, and a curved part , as shown in the diagram. The curve part is an arc of a circle, centre and radius 2m.

Find the length of .

Test Your Understanding

Figure 1 shows the triangle , with , and radians. The arc , where lies on , is an arc of a circle with centre and radius 8 cm. The region , shown shaded in Figure 1, is bounded by the straight lines and and the arc .

Find

(a) The length of the arc .

(b) The perimeter of , giving your answer to 3 significant figures.

Ex 5C Page 120