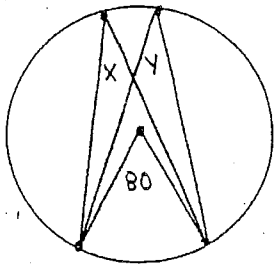
Unit 7 Review

Name: Key

Section A: Mastery Questions

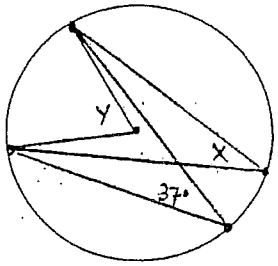
Find the missing angle or sides using circle properties. (1 each)

1.



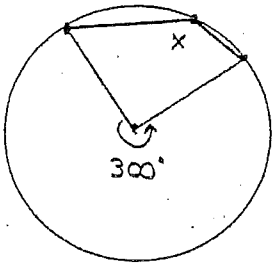
X = 40°
Y = 40°

2.



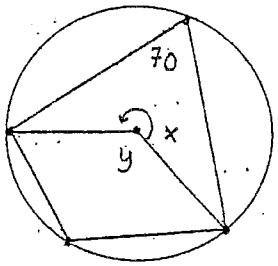
X = 37°
Y = 74°

3.



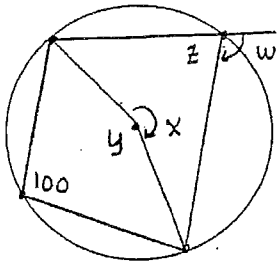
X = 150°

4.



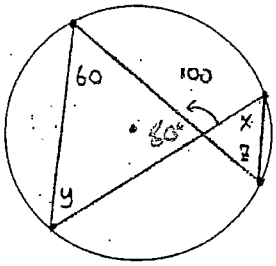
X = 220°
Y = 140°

5.



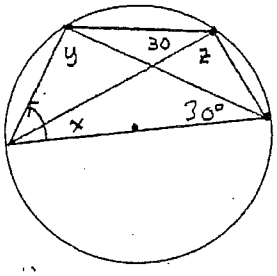
W = 100°
X = 200°
Y = 160°
Z = 80°

6.



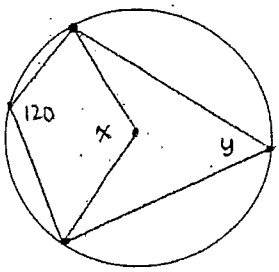
X = 60°
Y = 40°
Z = 40°

7.



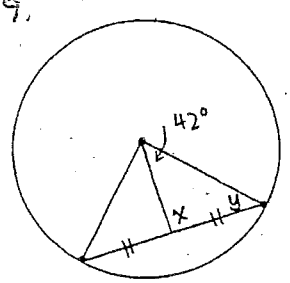
X = 60°
Y = 90°
Z = 90°

8.



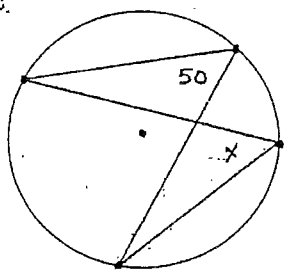
X = 120°
y = 60°

9.



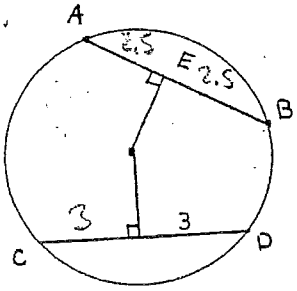
X = 90°
Y = 48

10.



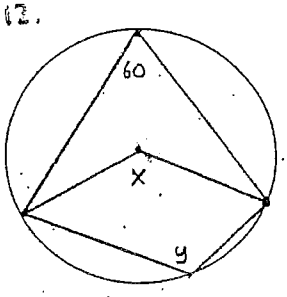
X = 50°

11.



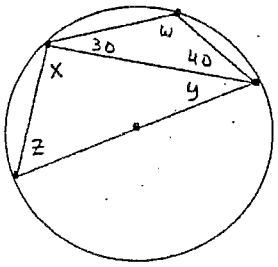
AB = 5
AE = 2.5
CD = 6

12.



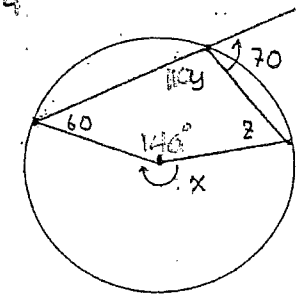
X = 120°
Y = 120°

13.



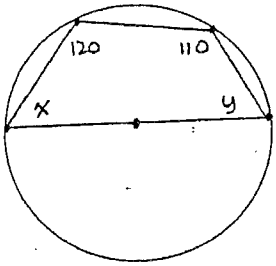
W = 110°
X = 90°
Y = 20°
Z = 70°

14.



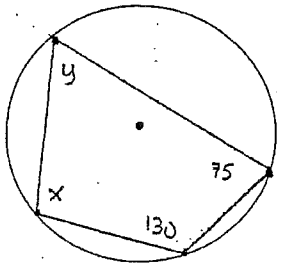
X = 220°
Y = 110°
Z = 50°

15.



X = 70°
Y = 60°

16.

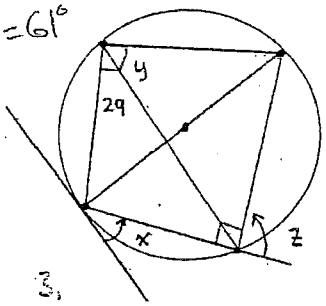


X = 105°
Y = 50°

Section B: Regular Questions

Find the missing angle or sides using circle properties. (1 each)

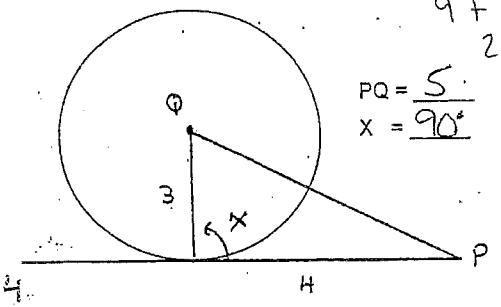
1.



$90-29=61^\circ$

$X = 29^\circ$
$Y = 61^\circ$
$Z = 90^\circ$

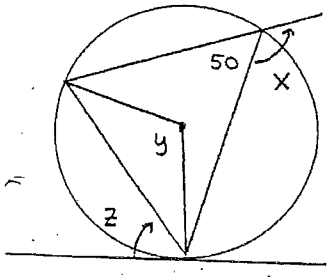
2.



$3^2+4^2=(PQ)^2$
$9+16=PQ^2$
$25=PQ^2$

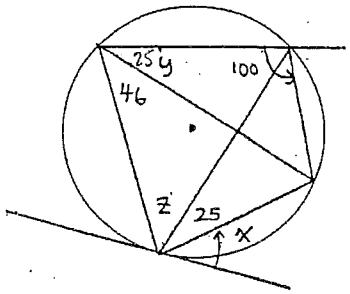
$PQ = 5$
$X = 90^\circ$

3.



$X = 130^\circ$
$Y = 100^\circ$
$Z = 50^\circ$

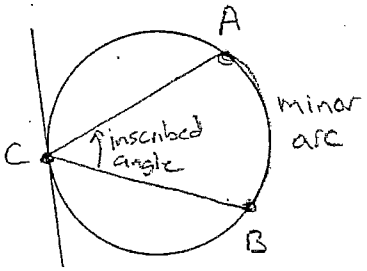
4.



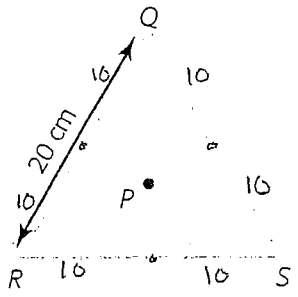
$X = 46^\circ$
$Y = 25^\circ$
$Z = 55^\circ$

5. Draw and label each of the following parts on the circle provided.

i. minor arc AB
ii. inscribed angle ACB
iii. tangent line GH with a point of tangency at C



6. Two circles have a common centre P. Three chords in the larger circle are tangent to the smaller circle and form Δ QRS. Determine the perimeter of the triangle. (2 marks)



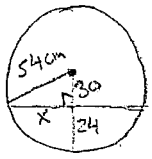
$P = 10+10+10+10+10+10$

$P = 60\text{cm}$

$P = 60\text{ cm}$

16

7. The depth of water in a circular pipe of radius 54 cm is 24 cm. What is the width of the water's surface across the pipe to the nearest centimetre? Include a diagram. (3 marks)



$54^2 - 30^2 = x^2$

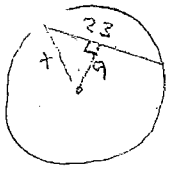
$2016 = x^2$

$x = 44.90$

$44.90 \times 2 = 89.80$

89.80 cm

8. A circle has a chord AB 23cm in length and 9cm from the center. What is the diameter of the circle? Include a diagram. (3 marks)



$9^2 + (11.5)^2 = x^2$

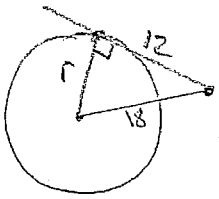
$213.25 = x^2$

$14.60 = x$

$2(14.60)$

$d = 29.21$ cm

9. A tangent segment is 12cm long and the exterior point is 18cm from the center. Calculate the radius. Include a diagram. (3 marks)



$18^2 = 12^2 + r^2$

$18^2 - 12^2 = r^2$

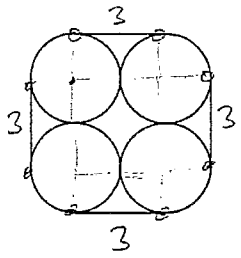
$180 = r^2$

$13.42 = r$

$r = 13.42$ cm

Bonus:

Four fluorescent light bulb tubes of diameter 3 cm are tied together into a bundle with a piece of string, as shown in the diagram. What is the shortest piece of string needed if an extra 10 cm of string is needed for tying the knot?



$4(3) + 2\pi(1.5) + 10$

Sides Circumference Extra String

$= 12 + 9.4248 + 10$

31.42 cm

9