6.3 Exercise-Angles In A Circle

A Review the relationships with circles.

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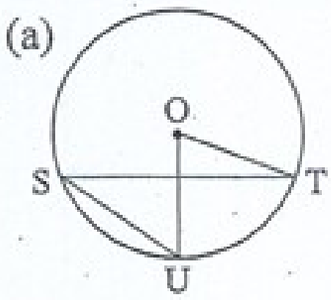
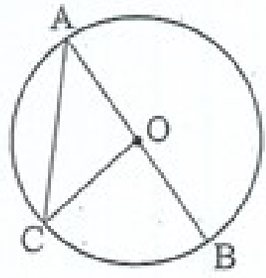
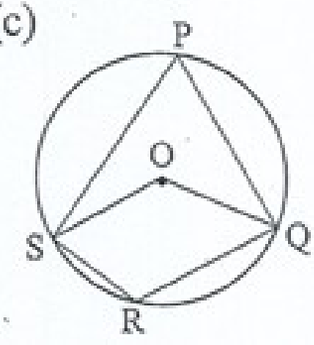


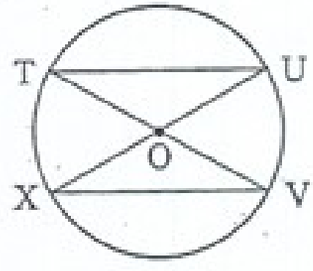
(b)



(c)



(d)



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(a)

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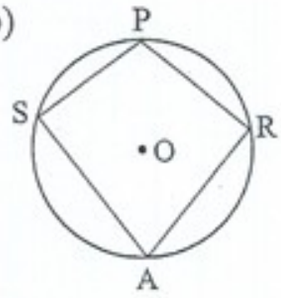

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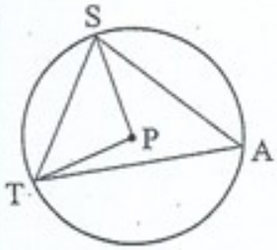

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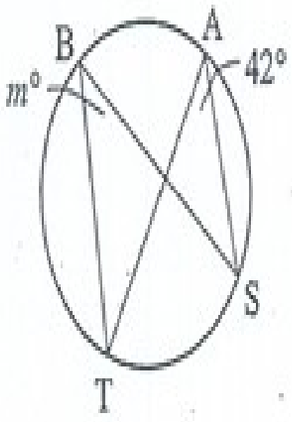
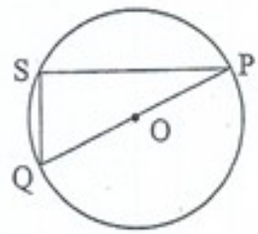
(a) Why is $\angle A = \angle B$? What is the value of m?



(b) What type of line segment is PQ? What is the measure of $\angle S$?



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(a) 20° (b) 40° (c) 80°

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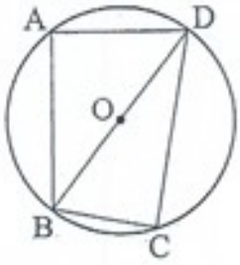

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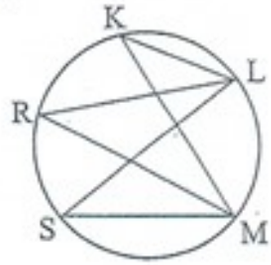
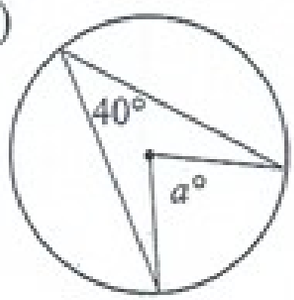
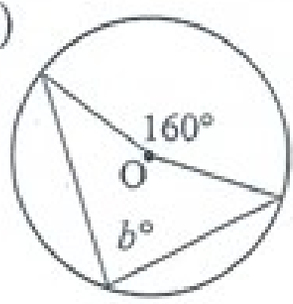


7 Which property of angles in a circle is used to find each measure? Find each missing measure. Give reasons for your answers.

(a)



(b)



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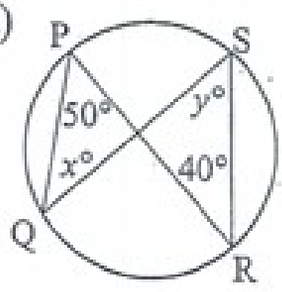

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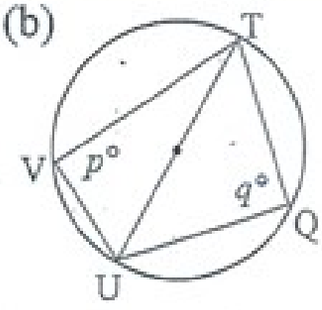

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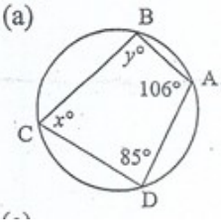

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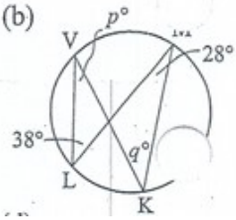

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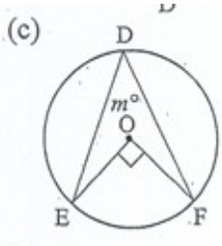

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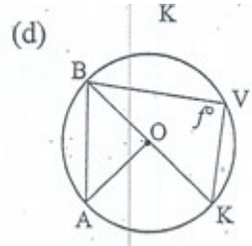
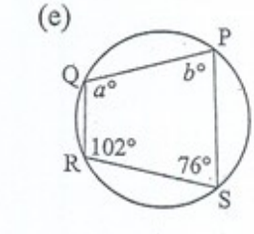
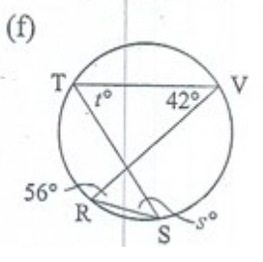


(e)



(f)



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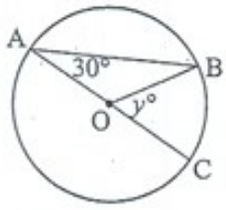

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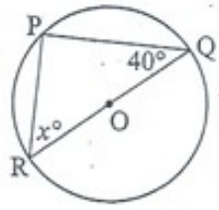

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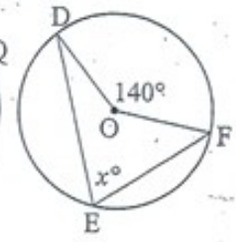

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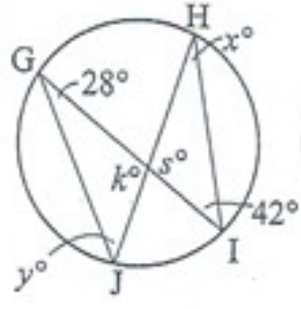

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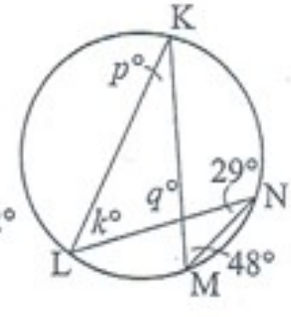

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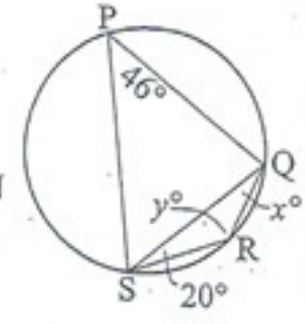

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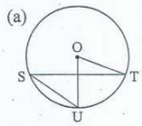
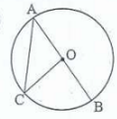
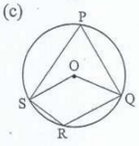
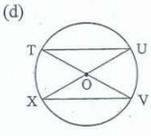
(a) 

(b) 

(c) 

(d) 

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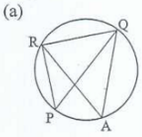
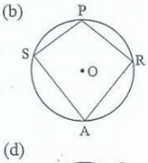
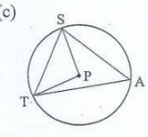
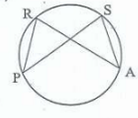
(a) 

(b) 

(c) 

(d) 

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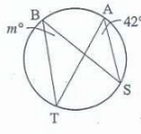

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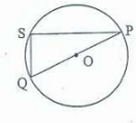

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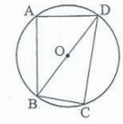
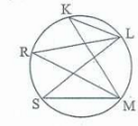
(a) 

(b) 

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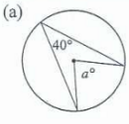
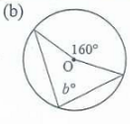
(a) 

(b) 

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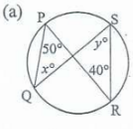
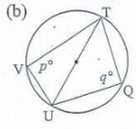
(a) 

(b) 

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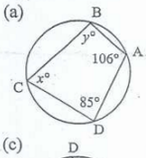
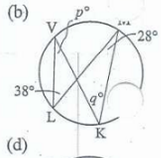
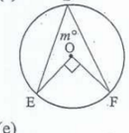
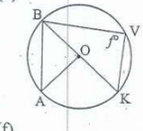
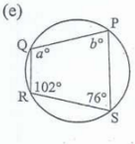
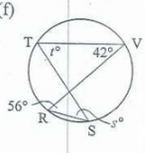
(a) 

(b) 

(c) 

(d) 

(e) 

(f) 

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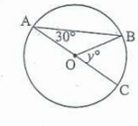
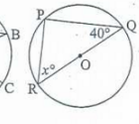
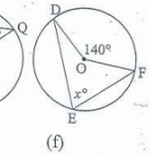
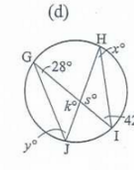
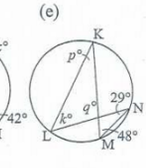
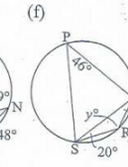
(a) 

(b) 

(c) 

(d) 

(e) 

(f) 

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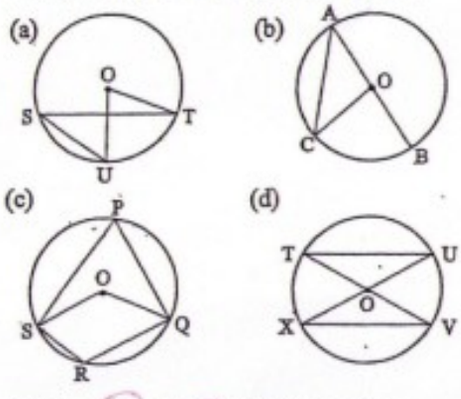
1.a) $\angle TSU$; $\angle TOU$ **b)** $\angle BAC$, $\angle BOC$ **c)** $\angle SPQ$, $\angle SRQ$, $\angle PSR$, $\angle PQR$; $\angle SOQ$ **d)** $\angle VTU$, $\angle VXU$, $\angle TUX$, $\angle TVX$; $\angle XOV$, $\angle TOU$ **2.a)** $\angle P = \angle A$ **b)** $\angle P + \angle A = 180°$ **c)** $\angle P = 2\angle A$ **d)** $\angle P = \angle A$ **3.a)** They are inscribed angles on the same chord; 42° **b)** diameter; 90° **4.a)** 40° **b)** 80° **c)** 160° **5.a)** 40° **b)** 25° **c)** 55° **6.a)** $\angle BAD = \angle BCD$ **b)** $\angle LKM = \angle LRM = \angle DSM$; $\angle KLS = \angle KMS$; $\angle RLS = \angle RMS$ **7.** The measure of a central angle in a circle is twice the inscribed angle drawn on the same chord. **a)** $a° = 80°$ **b)** $b° = 80°$ **8.a)** Angles drawn on the same chord have the same measure; $x° = 40°$, $y° = 50°$ **b)** Angles drawn on a diameter measure 90°, $p° = 90°$, $q° = 90°$ **9.a)** $x° = 74°$, $y° = 95°$ **b)** $p° = 28°$, $q° = 38°$ **c)** $m° = 45°$ **d)** $f° = 90°$ **e)** $a° = 104°$, $b° = 78°$ **f)** $s° = 42°$, $t° = 56°$ **10.a)** $y° = 60°$ **b)** $x° = 50°$ **c)** $x° = 70°$ **d)** $x° = 28°$, $y° = 42°$, $s° = 110°$, $k° = 110°$ **e)** $k° = 48°$, $p° = 29°$, $q° = 103°$ **f)** $x° = 26°$, $y° = 134°$

Answers

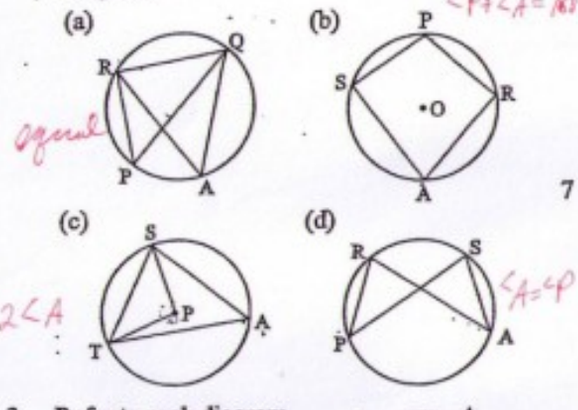
6.3 Exercise

A **Review the relationships with circles.**

1 For each of the diagrams, name the inscribed angles and the central angles.

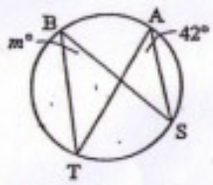


2 How are $\angle P$ and $\angle A$ related in each diagram?

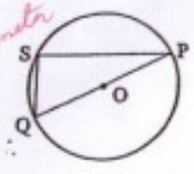


3 Refer to each diagram.

(a) Why is $\angle A = \angle B$? What is the value of m?



(b) What type of line segment is PQ? What is the measure of $\angle S$?



4 An arc subtends each angle at the circumference. What is the measure of the corresponding central angle?

(a) 20° (b) 40° (c) 80°

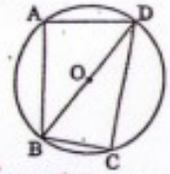
5 An arc subtends each angle at the centre of the circle. What is the measure of the corresponding inscribed angle at the circumference?

(a) 80° (b) 50° (c) 110°

B **To find the missing measures in some problems, you need to use other properties of geometric figures.**

6 For each diagram, which angles are equal?

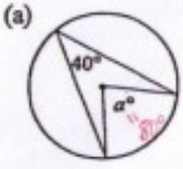
(a)



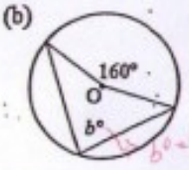
(b)

7 Which property of angles in a circle is used to find each measure? Find each missing measure. Give reasons for your answers.

(a)

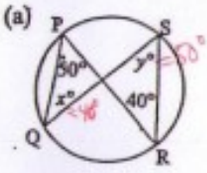


(b)

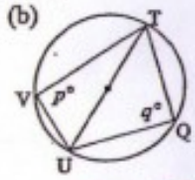


8 Which property of angles in a circle is used to find each measure? Find each missing measure. Give reasons for your answers.

(a)

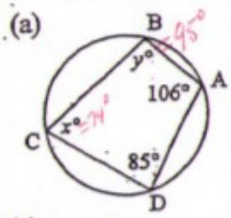


(b)

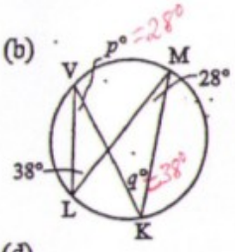


9 Find the missing measures. Do not use your protractor.

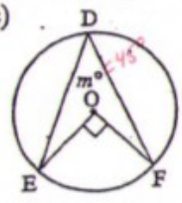
(a)



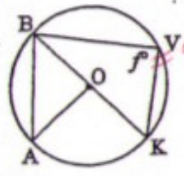
(b)



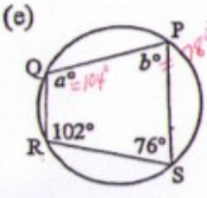
(c)



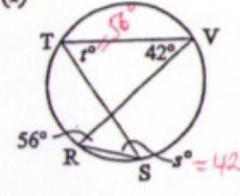
(d)



(e)



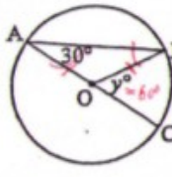
(f)



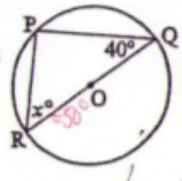
C To solve some problems, you may need to use more than one geometric fact.

10 Find the missing measures. Give reasons for your answers.

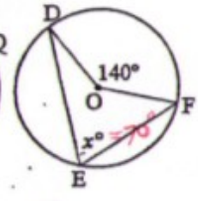
(a)



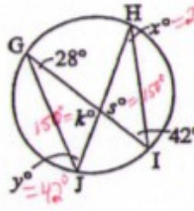
(b)



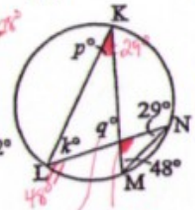
(c)



(d)



(e)



(f)