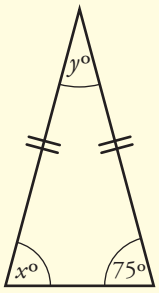
chapter 15 review

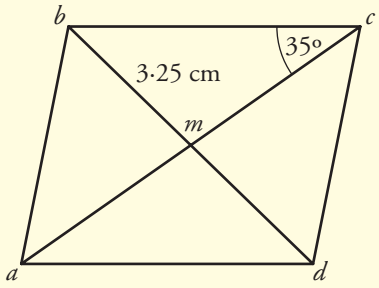
1. (a) Calculate the value of x and the value of y in the diagram.



(b) ✍ $abcd$ is a parallelogram. The diagonals $[ac]$ and $[db]$ intersect at m.

(i) If $|\angle bca| = 35°$, find $|\angle cad|$ and give a reason for your answer.

(ii) If $|bm| = 3{\cdot}25$ cm, find $|bd|$ and give a reason for your answer.



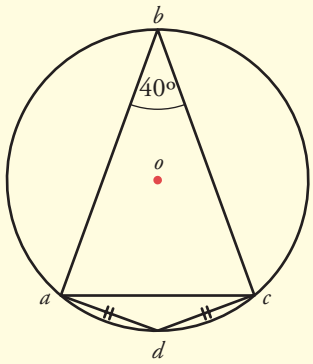
(iii) Show that the $\triangle bmc$ and the $\triangle amd$ are congruent.

(c) ✍ $abcd$ is a cyclic quadrilateral. $|\angle abc| = 40°$ and $|ad| = |dc|$.

Find:

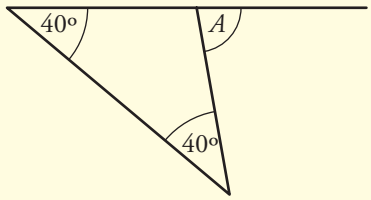
(i) $|\angle adc|$

(ii) $|\angle dac|$.

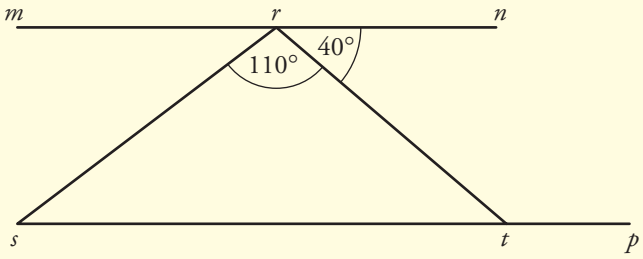


2. (a) Find the value of angle A in the diagram.

Give a reason for your answer.



(b) ✍ In the diagram given, $mn \parallel sp$, $|\angle srt| = 110°$ and $|\angle trn| = 40°$.



Find **(i)** $|\angle mrs|$ **(ii)** $|\angle rst|$ **(iii)** $|\angle rtp|$.

Give a reason for each answer.

(c) ✍ In the triangle abc, $xy \parallel bc$, $|ab| = |ac|$, $|ax| = |ay|$ and $|\angle xay| = 35°$.

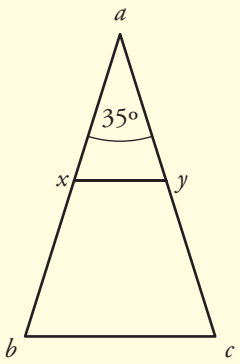
Find:

(i) $|\angle ayx|$

(ii) $|\angle ycb|$

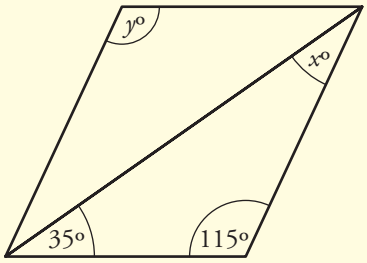
(iii) $|\angle abc|$.

Give a reason for each answer.



3. (a) Find the value of x and the value of y in the diagram.

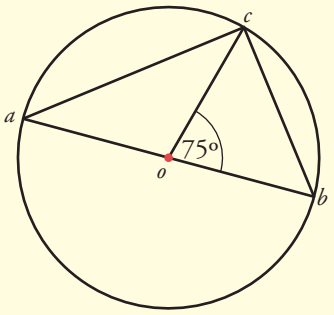
Give reasons for your answers.



(b) ✍ In the diagram given, $[ab]$ is the diameter of the circle with centre o.

If $|ab| = 5$ cm and $|\angle cob| = 75°$, find **(i)** $|oc|$ **(ii)** $|\angle ocb|$ **(iii)** $|\angle cao|$.

Give a reason for each answer.

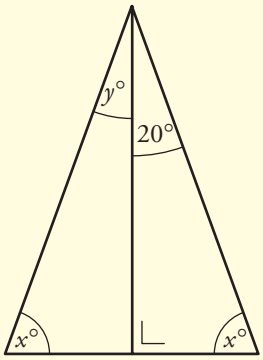


(c) ✍ Construct a triangle abc such that, $|ab| = 6$ cm, $|ac| = 7{\cdot}5$ cm and $|bc| = 5{\cdot}5$ cm.

All construction lines must be shown.

4. (a) Find the value of x and the value of y in the diagram.

Give reasons for your answers.

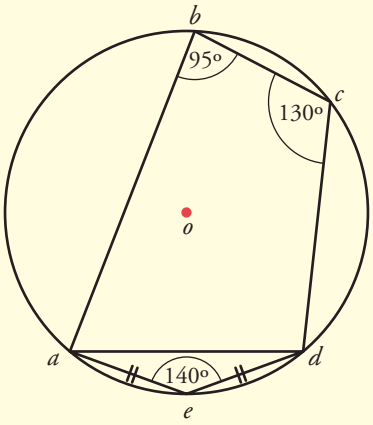


(b) ✍ Construct a triangle abc such that, $|ab| = 7$ cm, $|\angle abc| = 90°$ and $|bc| = 4{\cdot}5$ cm.

Measure the length of $[ac]$.

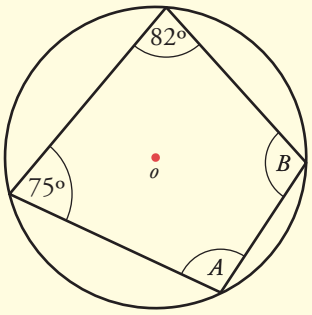
(c) ✍ a, b, c, d and e are points on a circle.

If $|\angle bcd| = 130°$, $|\angle abc| = 95°$ and $|\angle aed| = 140°$,
find **(i)** $|\angle bad|$ **(ii)** $|\angle eda|$.



5. (a) Find the value of A and the value of B in the diagram.

Give reasons for your answers.



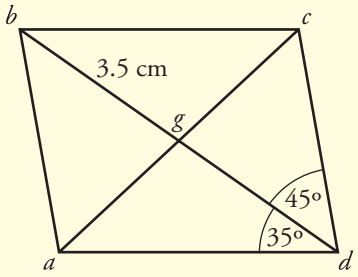
(b) ✍ In the parallelogram *abcd*, $|bg| = 3{\cdot}5$ cm, $|\angle adb| = 35°$ and $|\angle bdc| = 45°$.

Find:

(i) $|bd|$

(ii) $|\angle abd|$

(iii) $|\angle bad|$.

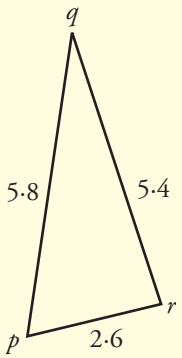


(c) ✍ Construct a triangle *xyz*, such that $|xy| = 8$ cm, $|\angle ayz| = 30°$ and $|xz| = 6{\cdot}5$ cm.

All construction lines must be shown.

6. (a) Name the largest and the smallest angles in the following triangle:

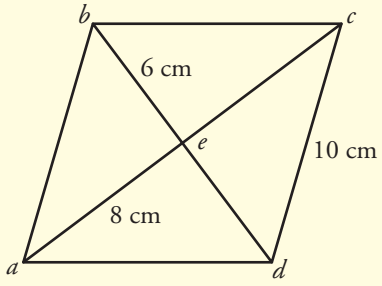
Give reasons for your answers.



(b) ✍ In the parallelogram *abcd*, $|be| = 6$ cm, $|ae| = 8$ cm and $|cd| = 10$ cm.

Find: **(i)** $|ed|$ **(ii)** $|ec|$ **(iii)** $|ab|$.

Show that the $\triangle aed$ is congruent to the $\triangle bec$.



(c) ✍ Construct a triangle *abc* such that, $|ab| = 10$ cm, $|ac| = 11$ cm and $|bc| = 12$ cm.

Construct the perpendicular bisectors of the sides *ab* and *ac*.
All construction lines must be shown.