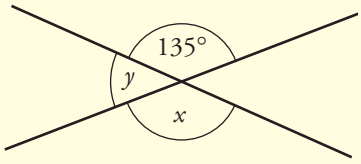
chapter 13 review

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



(b) ✍ A clock shows a time of 7:30.

(i) What is the acute angle between the hands of the clock?

(ii) What is the reflex angle between the hands of the clock?

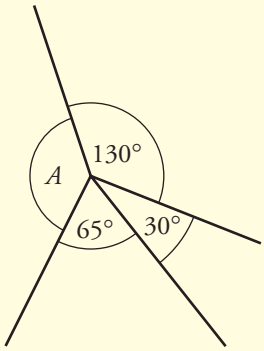
(iii) What would be the acute angle between the hands one hour later?

(iv) What would be the reflex angle between the hands one hour after 9:30?

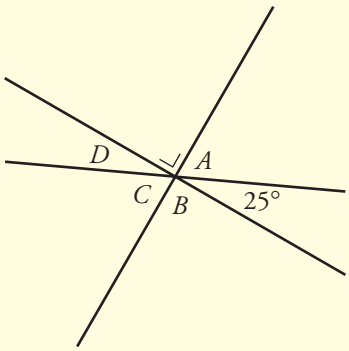
(c) ✍ Draw a line segment of 15 cm. Divide this line segment into three equal parts.

Use a ruler to check if the line segment is divided into three equal parts.

2. (a) ✍ Find the value of the angle A in the diagram. Give a reason for your answer.



(b) ✍ Find the value of each of the angles A, B, C and D in the diagram. Give reasons for your answers.



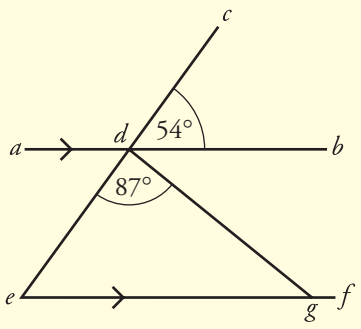
(c) ✍ In the diagram $[ab] \parallel [ef]$, $|\angle cdb| = 54°$ and $|\angle edg| = 87°$.

Find:

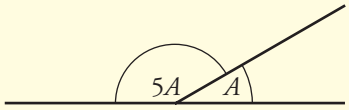
(i) $|\angle dge|$

(ii) $|\angle dgf|$

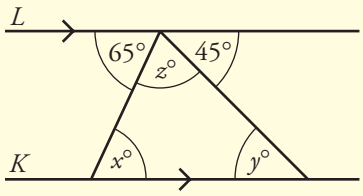
Give a reason for each answer.



3. (a) Find the value of A in the diagram. Give a reason for your answer.



(b) ✍ In the diagram, the line L is parallel to the line K. Calculate the value of $x°$, $y°$ and $z°$. Give a reason for each answer.



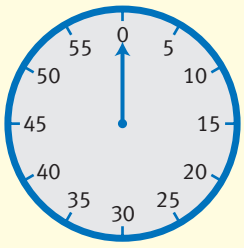
(c) ✍ Draw an angle of 64°. Construct the bisector of this angle. Use a protractor to check if the angle is bisected.

4. (a) Through what angle will the second hand on the stopwatch turn in:

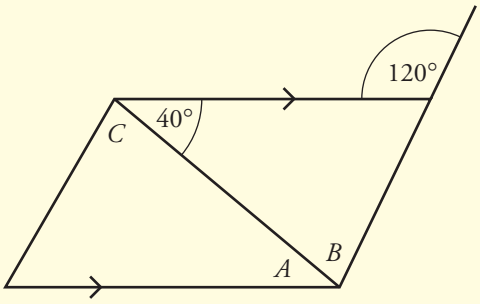
(i) 30 seconds

(ii) 5 seconds

(iii) 35 seconds

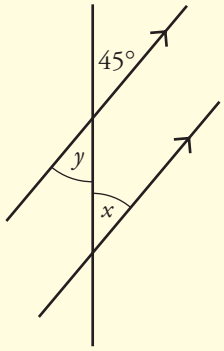


(b) ✍ Calculate the value of A, B and C in the diagram. Give a reason for each answer.

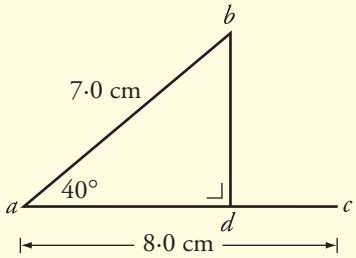


(c) ✍ Construct the perpendicular bisector of a line segment $[xy]$, where $|xy| = 13$ cm. All construction lines must be shown.

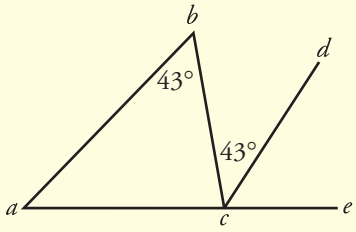
5. (a) Write down the size of the angles labelled x and y in the diagram. Give a reason for each answer.



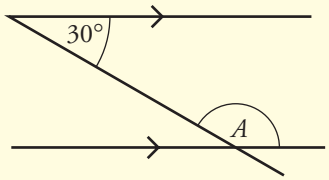
(b) ✍ Construct the following diagram as accurately as possible. All construction lines must be shown.



(c) ✍ In the diagram, $|\angle abc| = |\angle bcd| = 43°$.
Give a reason why ab is parallel to cd.
If $|\angle acb| = 80°$, find $|\angle dce|$ and $|\angle bac|$.



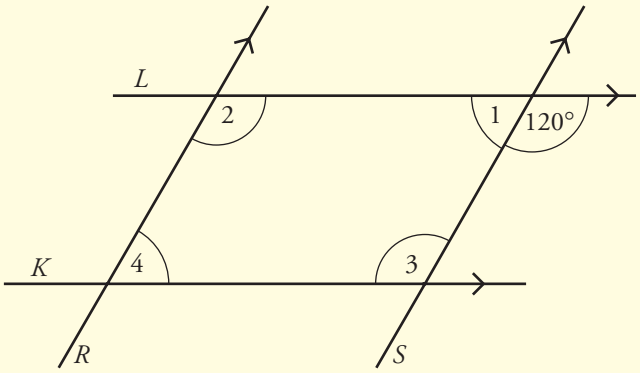
6. (a) Write down the size of the angle labelled A in the diagram. Give a reason for your answer.



(b) ✍ If $L \parallel K$ and $R \parallel S$, find the values of:

(i) $|\angle 1|$ **(ii)** $|\angle 2|$ **(iii)** $|\angle 3|$ **(iv)** $|\angle 4|$

Give a reason for each answer.



(c) ✍ Use a ruler to draw a triangle abc, where $|ab| = 6$ cm, $|ac| = 7$ cm and $|bc| = 8$ cm.

(i) Construct the perpendicular bisectors of each side.

(ii) Label the point where these bisectors meet. Call this point x.

(iii) Using your compass with xa as the radius, draw a circle.

(iv) Measure the radius of the circle.