

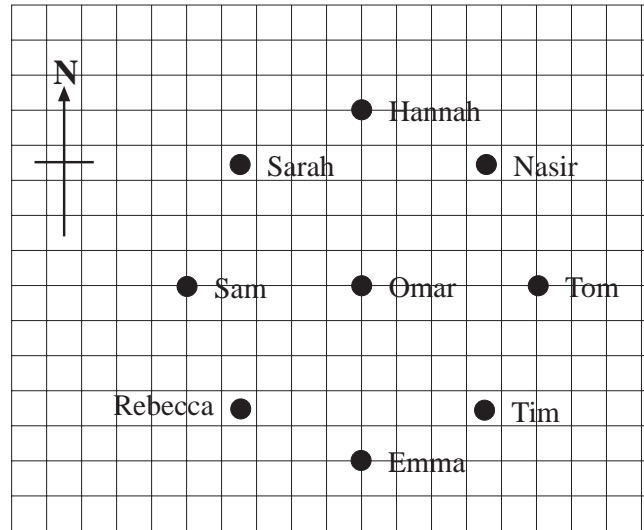
UNIT 5 Angles

Extra Exercises 5.1

1. There are 8 children standing in a circle with another child at the centre.

Who is:

- N of Omar,
- S of Sarah,
- W of Tim,
- N of Tim,
- NW of Omar,
- SW of Tom,
- NW of Emma,
- N of Emma and NW of Tom?



2. Use the diagram from question 1.

What angle does Omar turn through if he:

- turns clockwise from facing Tom to facing Emma,
- turns anticlockwise from facing Emma to facing Hannah,
- turns clockwise from facing Hannah to facing Nasir,
- turns clockwise from facing Nasir to facing Sam,
- turns anticlockwise from facing Sam to facing Hannah,
- turns clockwise from facing Hannah to facing Sarah?

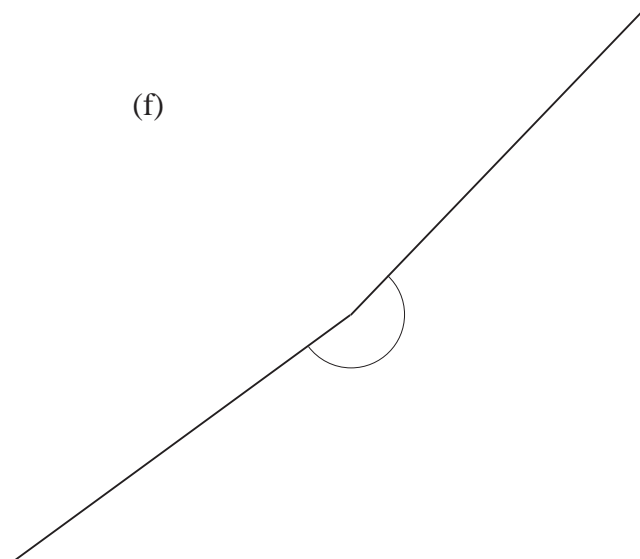
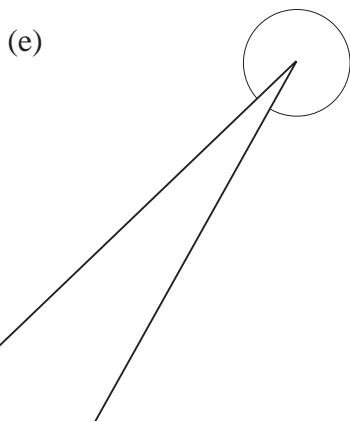
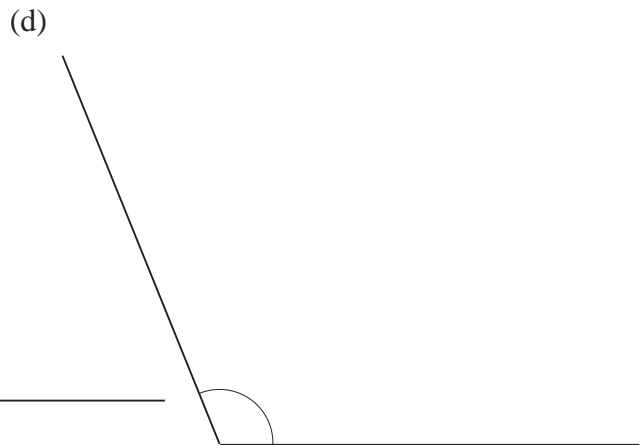
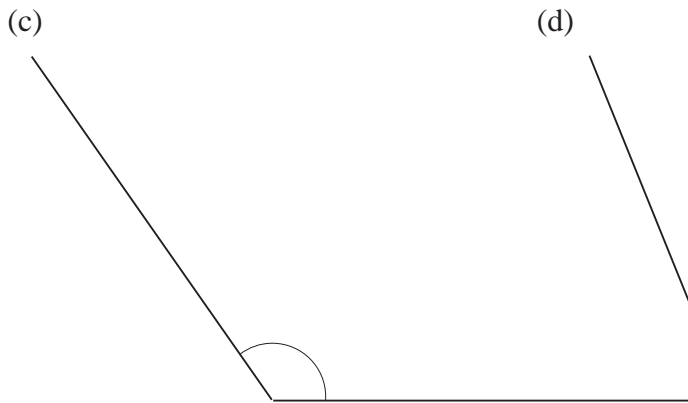
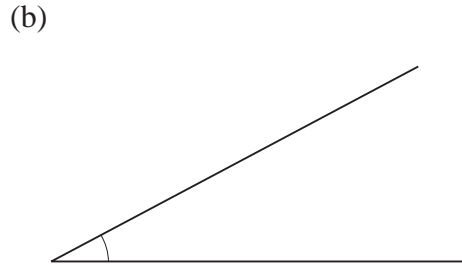
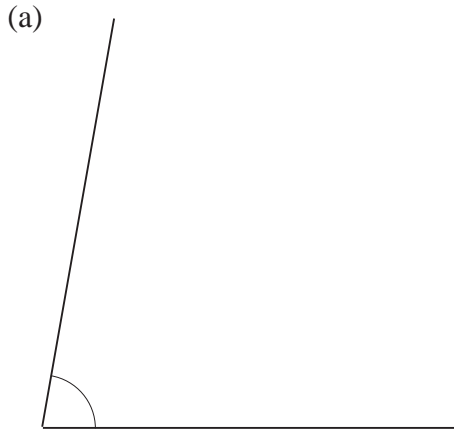
3. What angle does a playground roundabout turn through if it completes:

- 2 turns,
- 3 turns,
- 5 turns,
- $1\frac{1}{2}$ turns
- $1\frac{1}{4}$ turns,
- $2\frac{3}{4}$ turns ?

UNIT 5 Angles

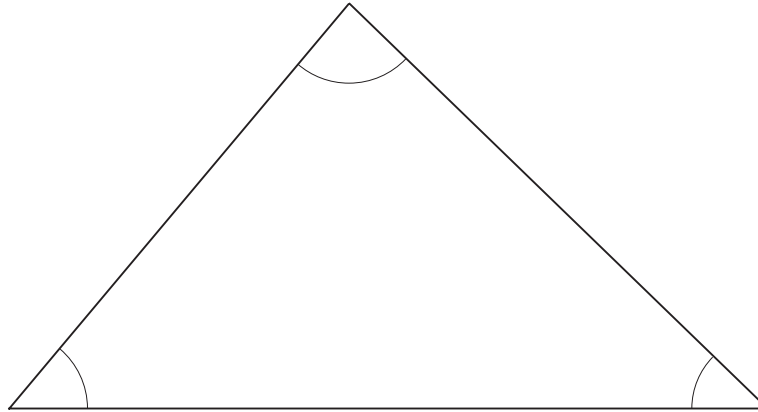
Extra Exercises 5.2

1. Measure each of these angles:



Extra Exercise 5.2

2. Measure the angles in this triangle.



What do the three angles add up to?

3. Draw angles with these sizes:
- | | | |
|-----------------|-----------------|-----------------|
| (a) 30° | (b) 62° | (c) 110° |
| (d) 145° | (e) 300° | (f) 270° |

UNIT 5 Angles

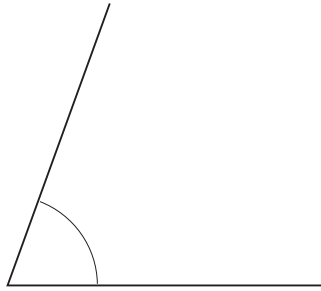
Extra Exercises 5.3

1. Draw these angles and label each of them *acute*, *obtuse* or *reflex*.

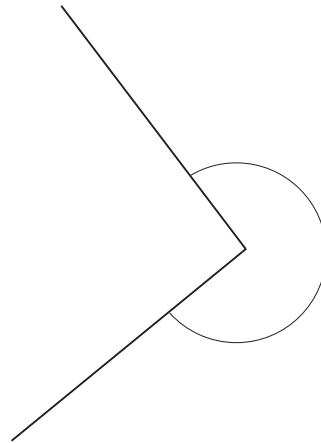
- (a) 35° (b) 100° (c) 72° (d) 350°

2. Is each of these angles *reflex*, *obtuse* or *acute* ?

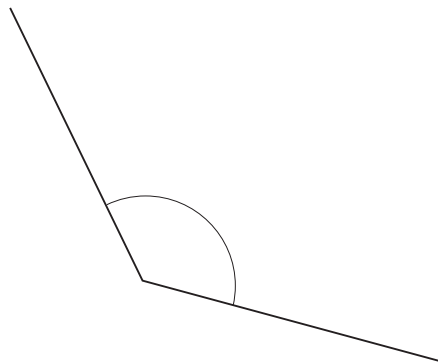
(a)



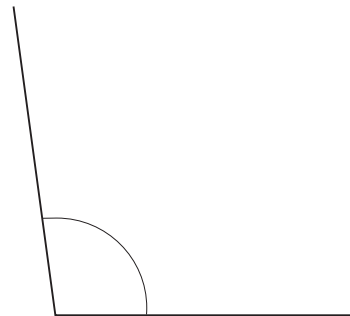
(b)



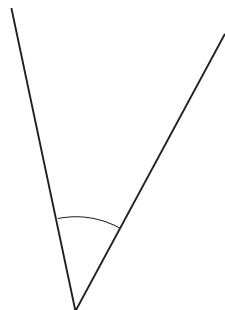
(c)



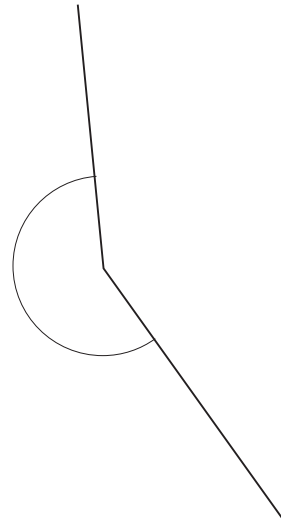
(d)



(e)



(f)

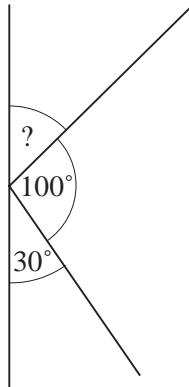


UNIT 5 Angles

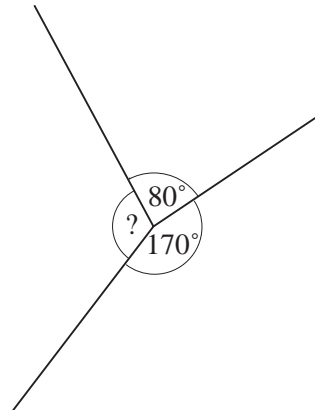
Extra Exercises 5.4

1. Find each of the unknown angles.

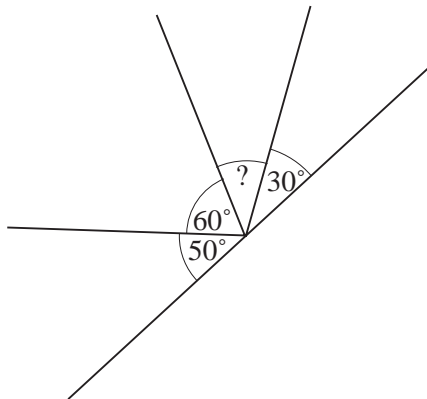
(a)



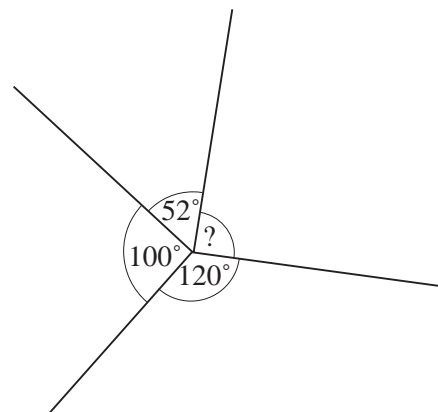
(b)



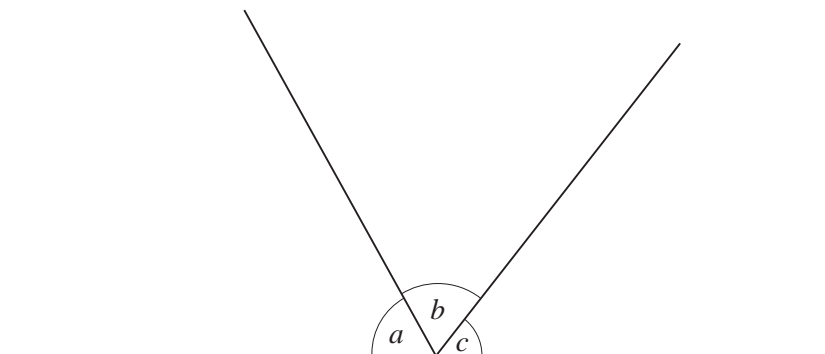
(c)



(d)



2. (a) Measure the angles marked a and b .

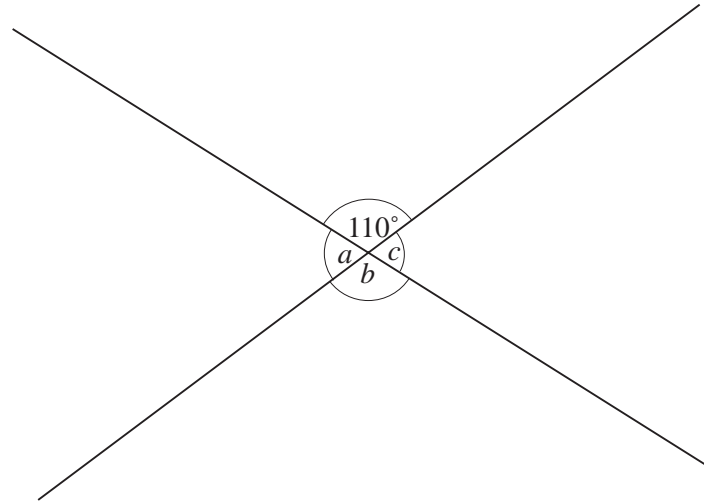


(b) Find c , without measuring the angle.

(c) Measure c , to check your answer.

Extra Exercises 5.4

3. The diagram shows 2 straight lines that cross.



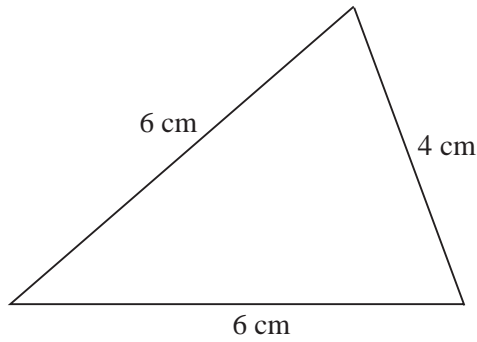
Find the angles marked a , b and c .

UNIT 5 Angles

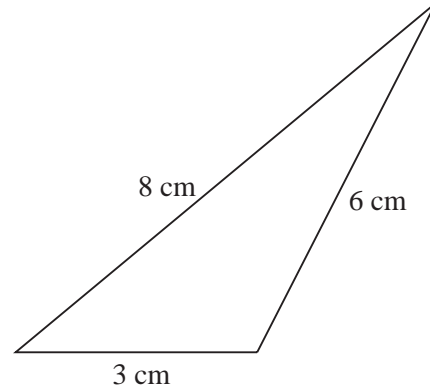
Extra Exercises 5.5

1. Construct these triangles. In each case, measure the angles and check that they sum to 180° .

(a)

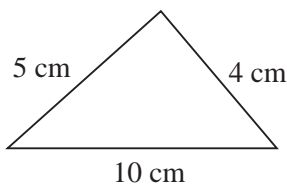


(b)

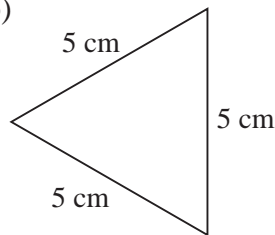


2. Which of the triangles can you draw?

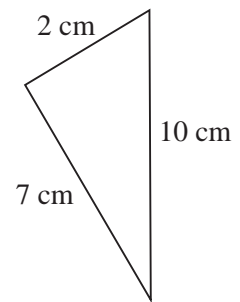
(a)



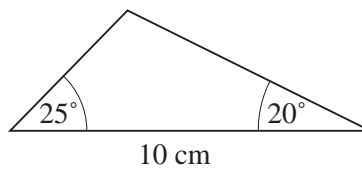
(b)



(c)

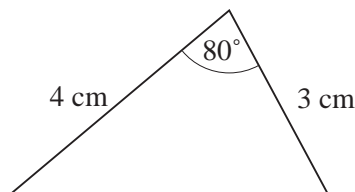


3. Construct the triangle below.



Measure the other two sides and the third angle in the triangle.

4. Construct the triangle below.



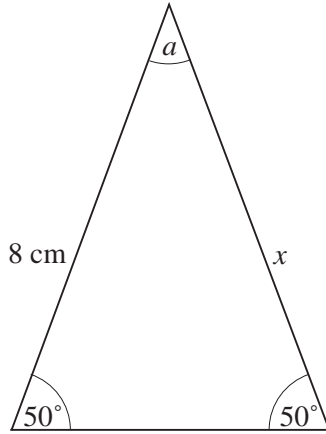
Measure the third side and the other two angles.

UNIT 5 Angles

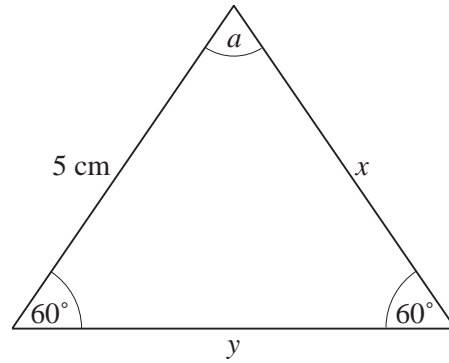
Extra Exercises 5.6

1. State whether each of the triangles is *equilateral*, *isosceles* or *scalene*. Find the unknown angles and lengths marked.

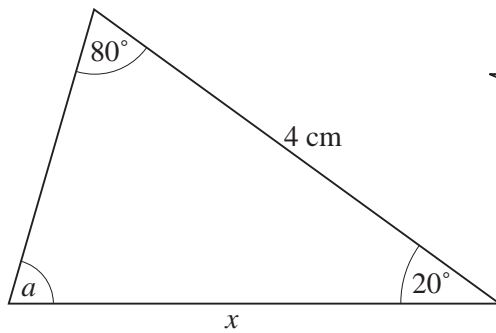
(a)



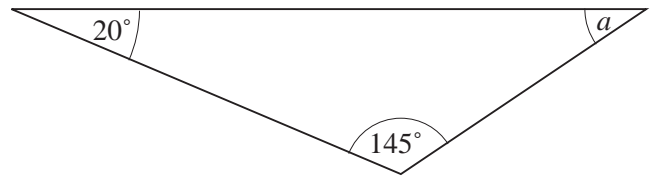
(b)



(c)

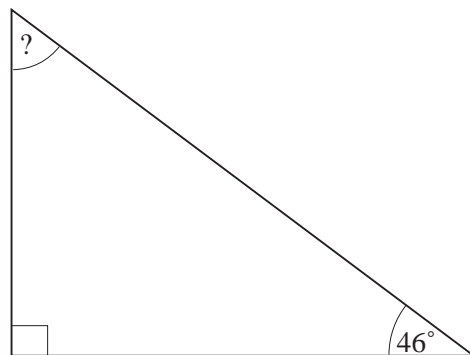


(d)

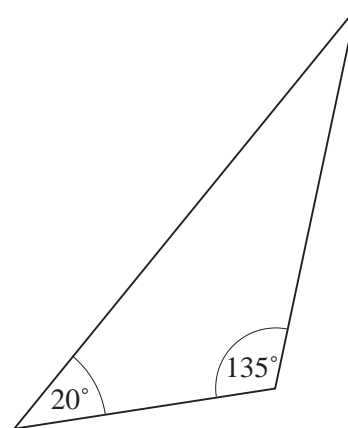


2. Find the size of the unknown angle in each triangle:

(a)

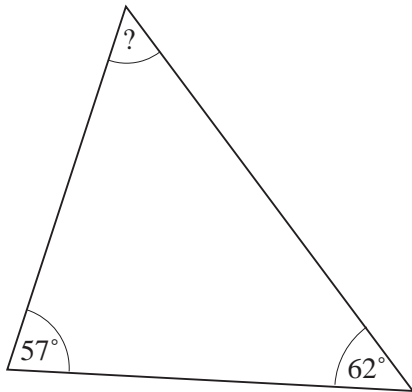


(b)

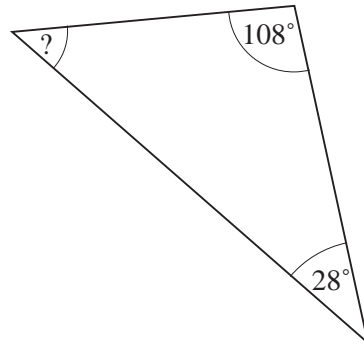


Extra Exercises 5.6

(c)

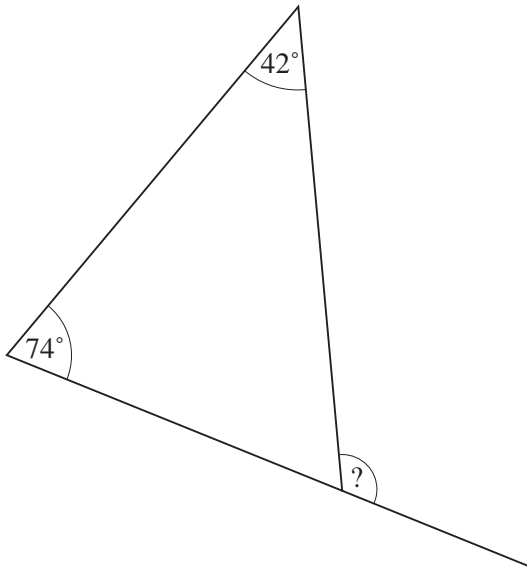


(d)

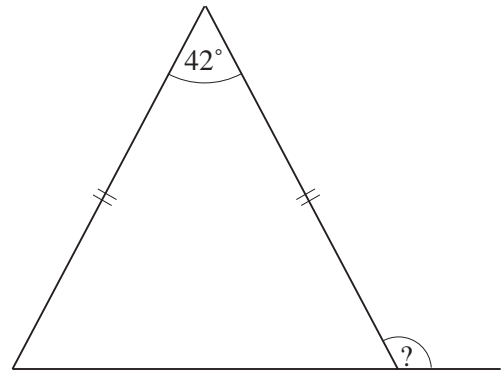


3. Find the exterior angle marked in each diagram:

(a)



(b)



Extra Exercises 5.1

Answers

1. (a) Hannah (b) Rebecca (c) Rebecca (d) Nasir
(e) Sarah (f) Emma (g) Sam (h) Hannah
2. (a) 90° (b) 180° (c) 45° (d) 135° (e) 270° (f) 315°
3. (a) 720° (b) 1080° (c) 1800° (d) 540° (e) 450° (f) 990°

Extra Exercises 5.2

Answers

1. (a) 80° (b) 28° (c) 125° (d) 112° (e) 343° (f) 190°

2. $50^\circ + 44^\circ + 86^\circ = 180^\circ$

Extra Exercises 5.3

Answers

1. (a) acute (b) obtuse (c) acute (d) reflex
- 2.. (a) acute (b) reflex (c) obtuse (d) obtuse
(e) acute (f) reflex

Extra Exercises 5.4

Answers

1. (a) 50° (b) 110° (c) 40° (d) 88°

2. (a) $a = 61^\circ$; $b = 68^\circ$ (b) and (c) $c = 51^\circ$

3. $a = 70^\circ$, $b = 110^\circ$, $c = 70^\circ$

Extra Exercises 5.5

Answers

1. (a) 71° , 71° , 38° (b) 104° , 21° , 55°
2. (a) No (b) Yes (c) No
3. 4.8 cm, 6.0 cm; 135°
4. 4.6 cm, 40° and 60°

Extra Exercises 5.6

Answers

1. (a) isosceles ; $a = 80^\circ$, $x = 8$ cm, (b) equilateral ; $a = 60^\circ$, $x = 5$ cm, $y = 5$ cm
(c) isosceles ; $a = 80^\circ$, $x = 4$ cm (d) scalene ; $a = 15^\circ$
2. (a) 44° (b) 25° (c) 61° (d) 44°
3. (a) 116° (b) 111°