

## P6 Angles

In this worksheet, you will recap on the following properties of angles and use it to find unknown angles in geometric figures:

- a) Angles on a straight line
- b) Vertically opposite angles
- c) Angles at a point
- d) Alternate angles ('Z' angles)
- e) Corresponding angles (optional)
- f) Interior angles ('U' angles)
- g) Sum of angles in a triangle, angles in an isosceles triangle and equilateral triangle, including exterior angle of a triangle
- h) Angles in squares and rectangles (including folded angles)
- i) Angles in 4-sided figures
- j) Angles in circle

### My Learning Notes on P6 Angles!



- Refer to your **Mind-map** did in P5 on **Properties of Angles + Angles in Circles.**

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- Remember to **mark out** all **EQUAL LENGTHS.**

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- **Outline** shapes and/or straight lines with highlighter if needed.

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- Put angles found into figures.

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Name: \_\_\_\_\_

Class: \_\_\_\_\_

Date	Homework

# ANGLES

Study the figures carefully. Remember to write the angles found onto the diagram and draw the necessary markings if needed.

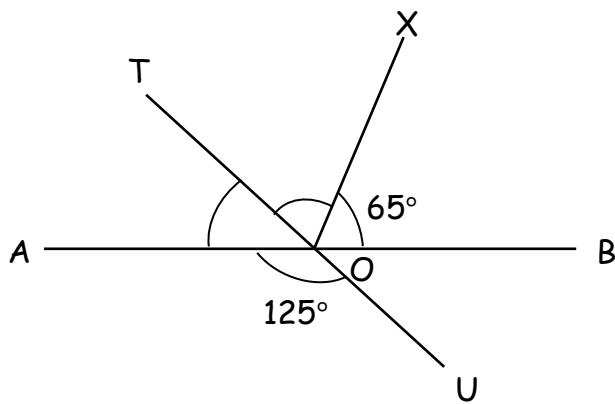
Show your working clearly in the spaces provided.

Note: The figures in this worksheet are not drawn to scale.

1. In the figure below, TU, AB and OX are straight lines.

(a) Find  $\angle TOA$ .

(b) Find  $\angle TOX$ .



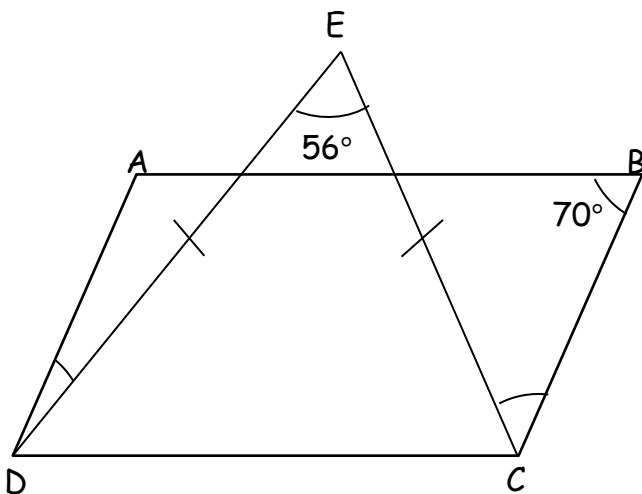
Answer: (a) \_\_\_\_\_

(b) \_\_\_\_\_

2. In the figure below, ABCD is a parallelogram and DE = EC.

(a) Find  $\angle ADE$ .

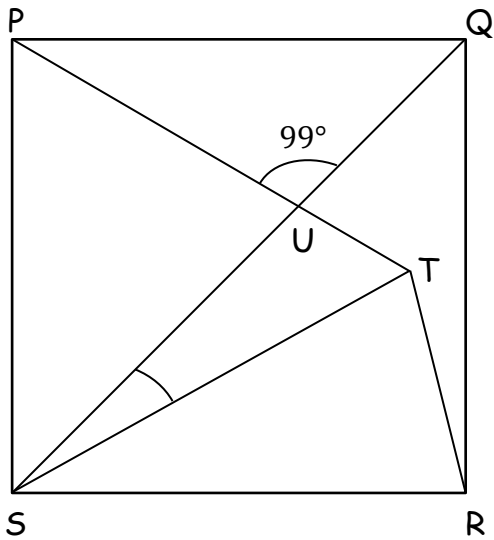
(b) Find  $\angle BCE$ .



Answer: (a) \_\_\_\_\_

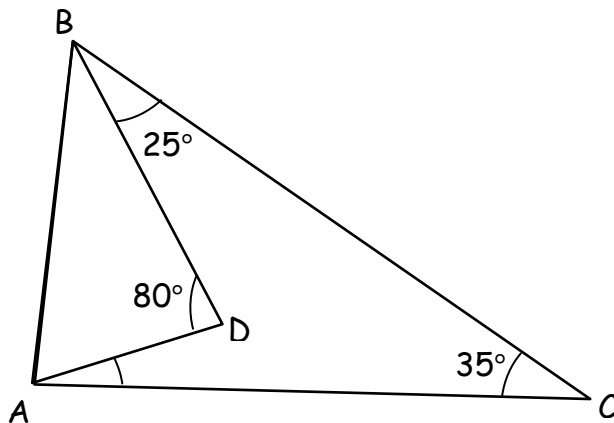
(b) \_\_\_\_\_

3. In the figure below, PQRS is a square. Given that  $ST = SR$ , SUQ and TUP are straight lines and  $\angle PUQ = 99^\circ$ , find  $\angle UST$ .



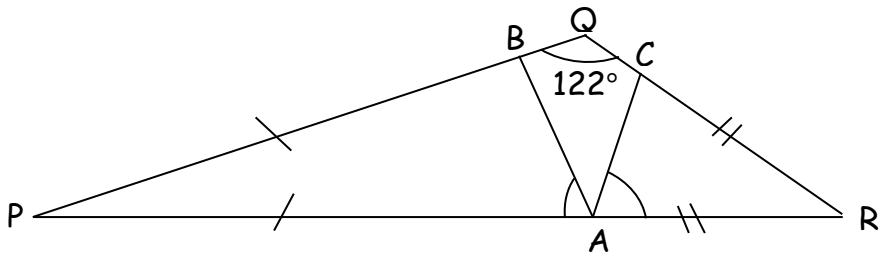
Answer: \_\_\_\_\_

4. The figure below is made up of 2 triangles. Find  $\angle DAC$ .



Answer: \_\_\_\_\_

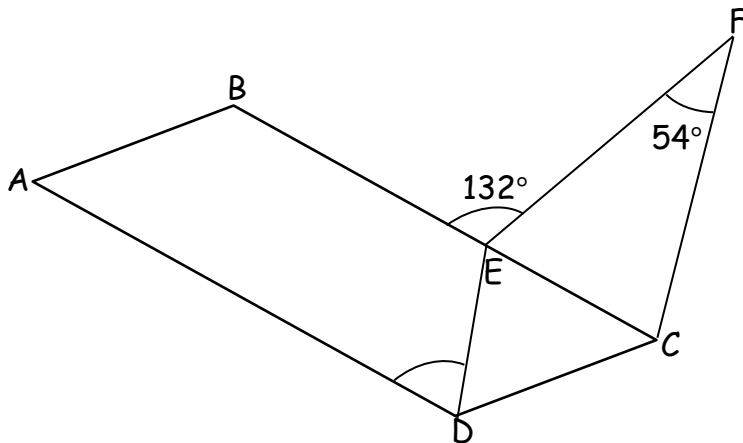
5. The figure below shows Triangle PQR.  $PB = PA$  and  $CR = AR$ .  $\angle PQR = 122^\circ$ .



Find the sum of  $\angle BAP$  and  $\angle CAR$ .

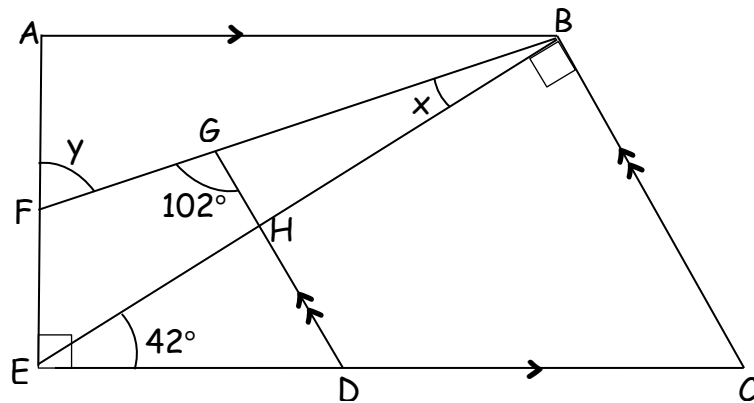
Answer: \_\_\_\_\_

6. In the figure, ABCD is a parallelogram and CDEF is a trapezium.  $DE \parallel CF$ .  $\angle BEF = 132^\circ$  and  $\angle EFC = 54^\circ$ . Find  $\angle EDA$ .



Answer: \_\_\_\_\_

7. In the figure below,  $ABCE$  is a trapezium.  $GD \parallel BC$  and  $AB \parallel EC$ .  $\angle FGD = 102^\circ$  and  $\angle BEC = 42^\circ$ .  $FB$  and  $EB$  are straight lines.

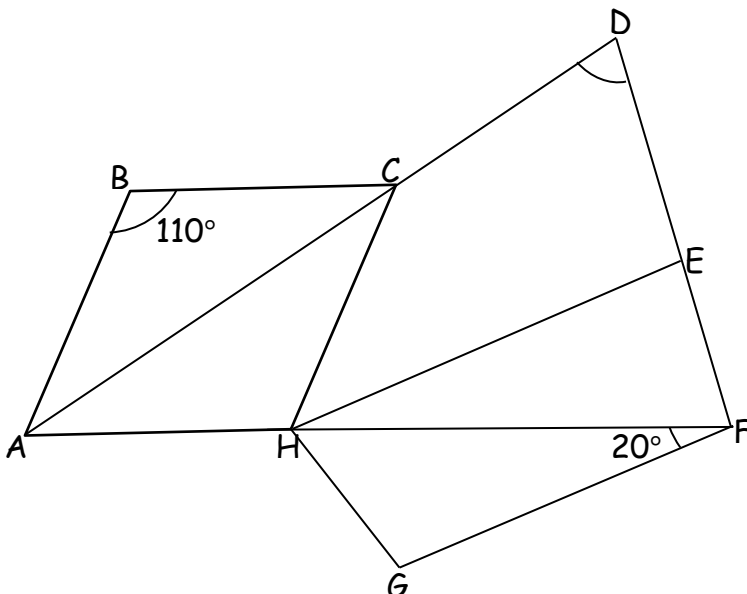


- (a) Find  $\angle x$ .  
 (b) Find  $\angle y$ .

Answer: (a) \_\_\_\_\_

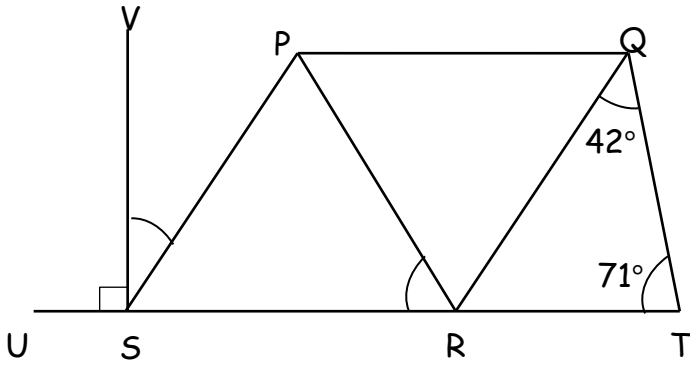
(b) \_\_\_\_\_

8. In the figure,  $ABCH$  is a rhombus.  $ACD$ ,  $AHF$  and  $DEF$  are straight lines.  $EH$  is parallel to  $FG$  and  $EH = HF$ .  $\angle ABC = 110^\circ$  and  $\angle HFG = 20^\circ$ .  $\angle CDE$ .



Answer: \_\_\_\_\_

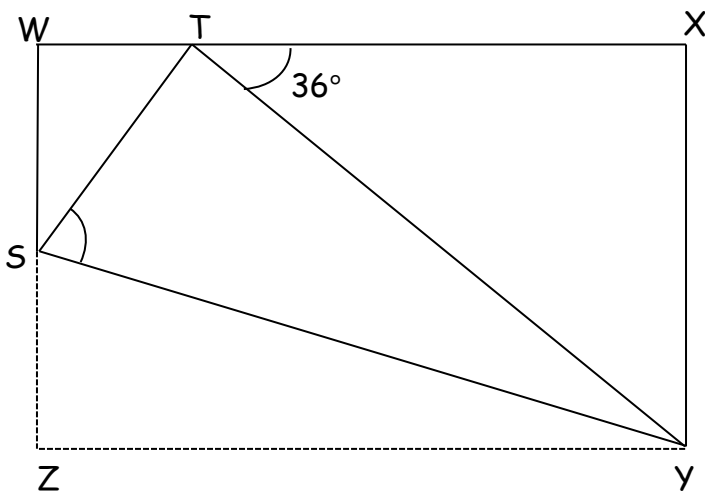
9. PQRS is a rhombus and USRT is a straight line.  
 (a) Find  $\angle PRS$ .  
 (b) Find  $\angle VSP$ .



Answer: (a) \_\_\_\_\_

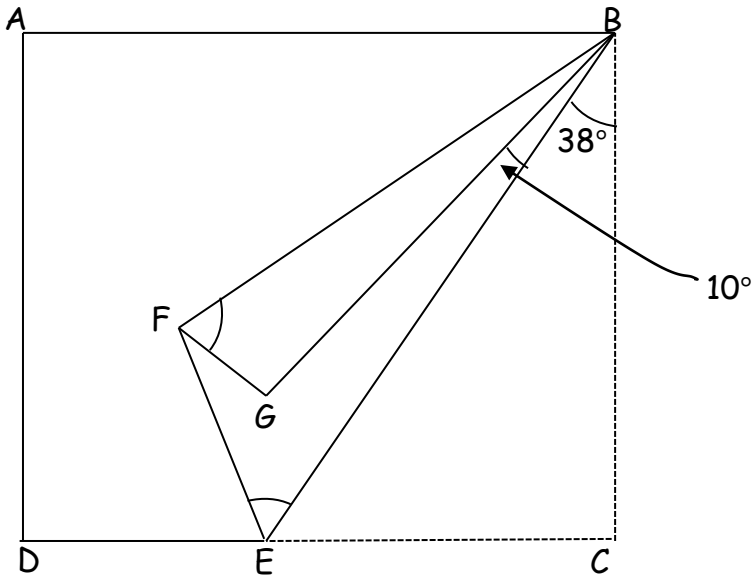
(b) \_\_\_\_\_

10. WXYZ is a rectangle folded along line SY.  $\angle XTY = 36^\circ$ . Find  $\angle TSY$ .



Answer: \_\_\_\_\_

11. In the figure below, a rectangular piece of paper is folded twice at its corner as shown.

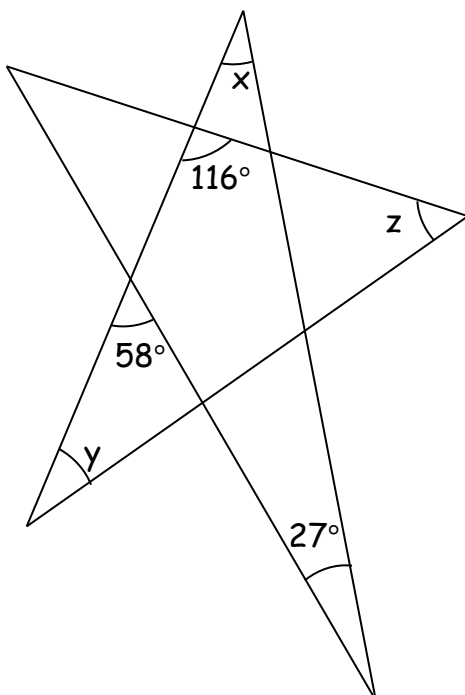


- (a) Find  $\angle BFG$ .  
 (b) Find  $\angle BEF$

Answer: (a) \_\_\_\_\_

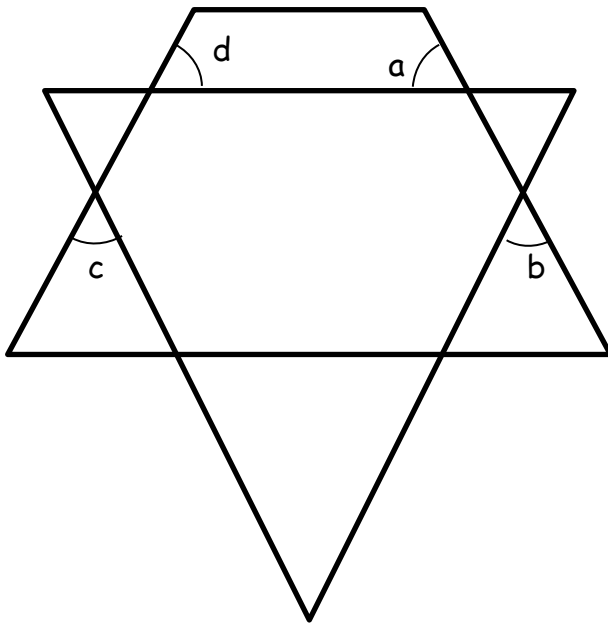
(b) \_\_\_\_\_

12. The diagram below is made up of straight lines. Find  $\angle x + \angle y + \angle z$ .



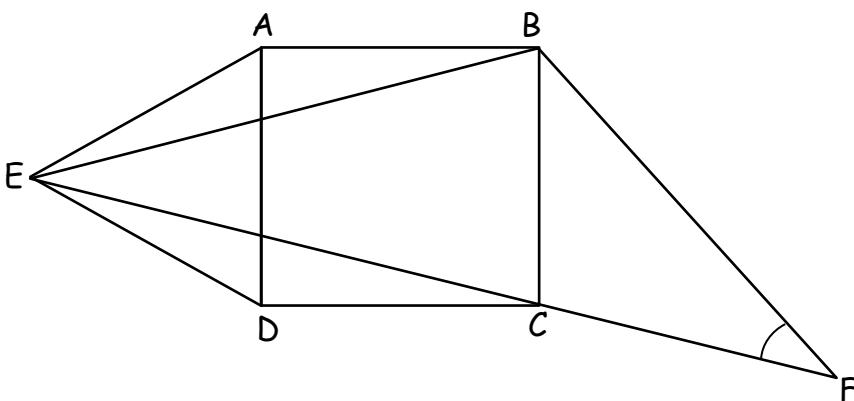
Answer: \_\_\_\_\_

13. The figure is made up of a trapezium and an equilateral triangle. Find the sum of  $\angle a$ ,  $\angle b$ ,  $\angle c$  and  $\angle d$ .



Answer: \_\_\_\_\_

14. The figure below is not drawn to scale. ABCD is a square and ADE is an equilateral triangle. BE and EF are straight lines and  $BC = CF$ . Find  $\angle CFB$ .

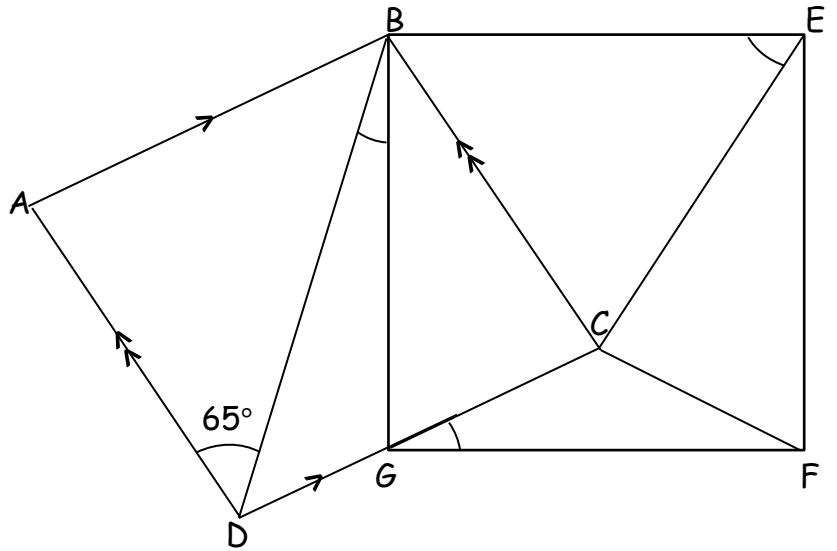


Answer: \_\_\_\_\_



15. In the figure below, ABCD is a parallelogram and BEFG is a square. Given that  $BG = BC = EC = EF$ , find

- (a)  $\angle BEC$ .
- (b)  $\angle CGF$ .
- (c)  $\angle DBG$ .



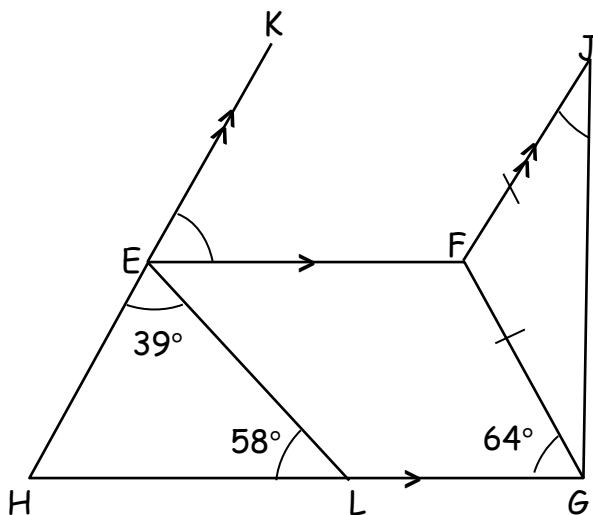
Answer: (a) \_\_\_\_\_

(b) \_\_\_\_\_

(c) \_\_\_\_\_

16. EFGH is a trapezium. FGJ is an isosceles triangle. HEK is a straight line.  $EF \parallel HG$  and  $EK \parallel FJ$ .

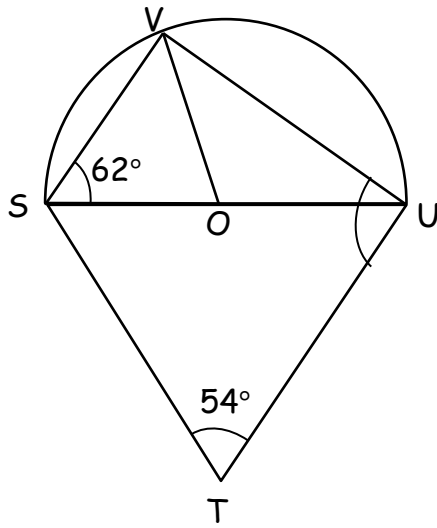
- (a) Find  $\angle KEF$ .
- (b) Find  $\angle FJG$ .



Answer: (a) \_\_\_\_\_

(b) \_\_\_\_\_

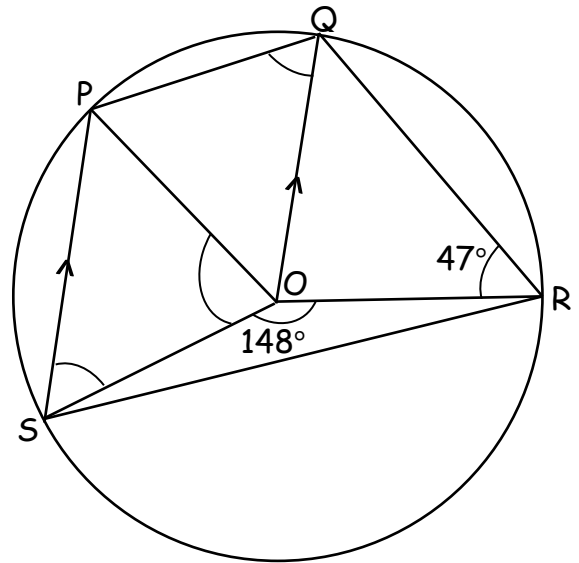
17. \*In the figure below,  $O$  is the centre of a semi-circle and  $STU$  is an isosceles triangle where  $ST = TU$ . Find  $\angle TUV$ .



Answer: \_\_\_\_\_

18. \*In the figure,  $O$  is the centre of the circle.  $SP$  is parallel to  $OQ$ .

- Find  $\angle OSP$ .
- Find  $\angle SOP$ .
- Find  $\angle OQP$ .



Answer: (a) \_\_\_\_\_

(b) \_\_\_\_\_

(c) \_\_\_\_\_