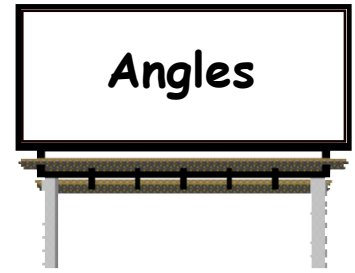
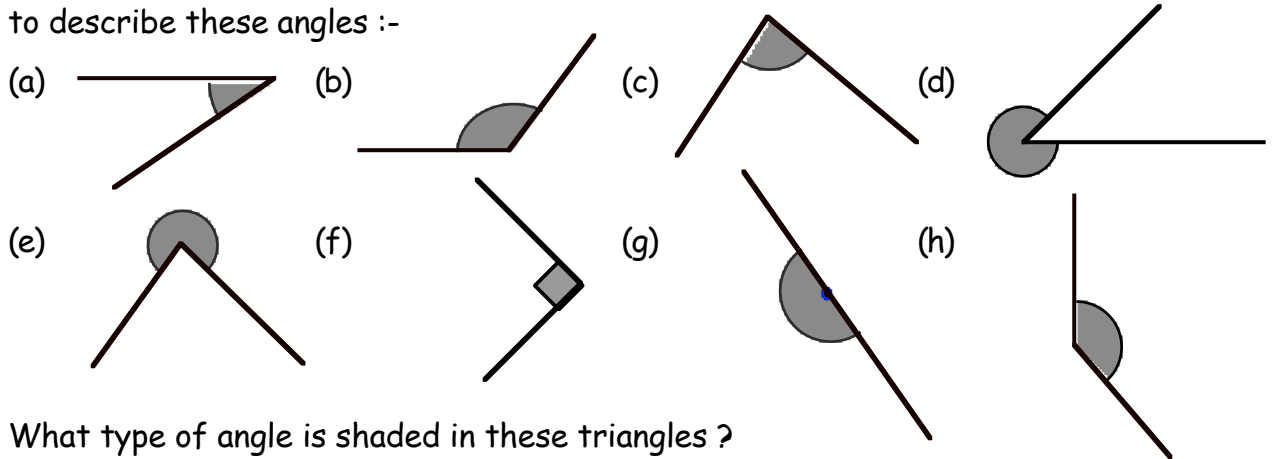


Chapter 8

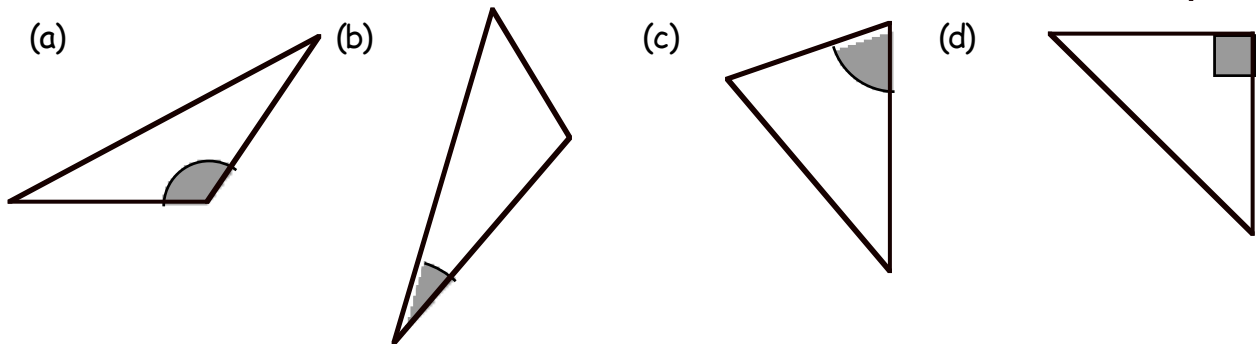


Exercise 1

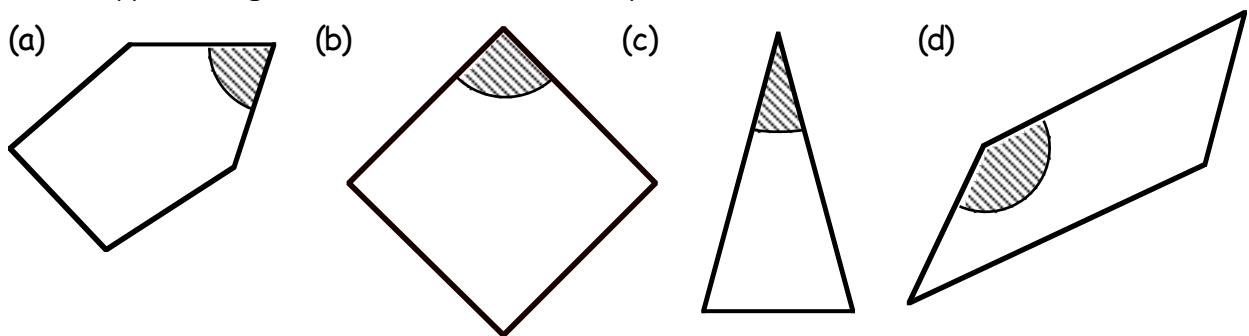
1. Use a word from " ACUTE, RIGHT, OBTUSE, STRAIGHT or REFLEX" to describe these angles :-



2. What type of angle is shaded in these triangles ?



3. What type of angle is marked in these shapes :-



4. Look at the angle sizes listed below :-

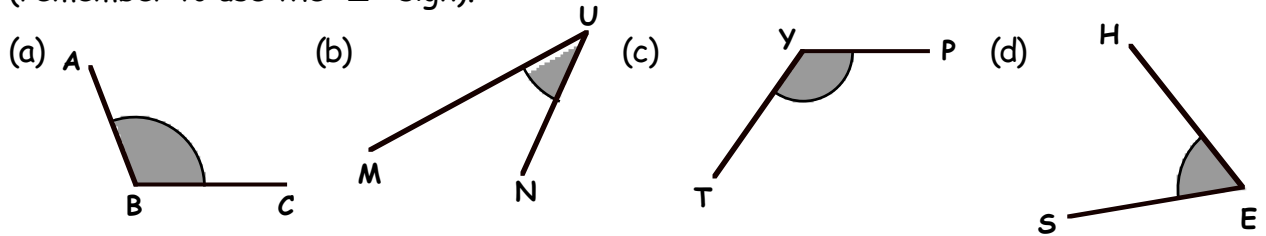
250°, 78°, 102°, 12°, 45°, 112°, 180°, 93°, 90°, 359°, 6°, 174°

Write down the sizes of those angles that are :-

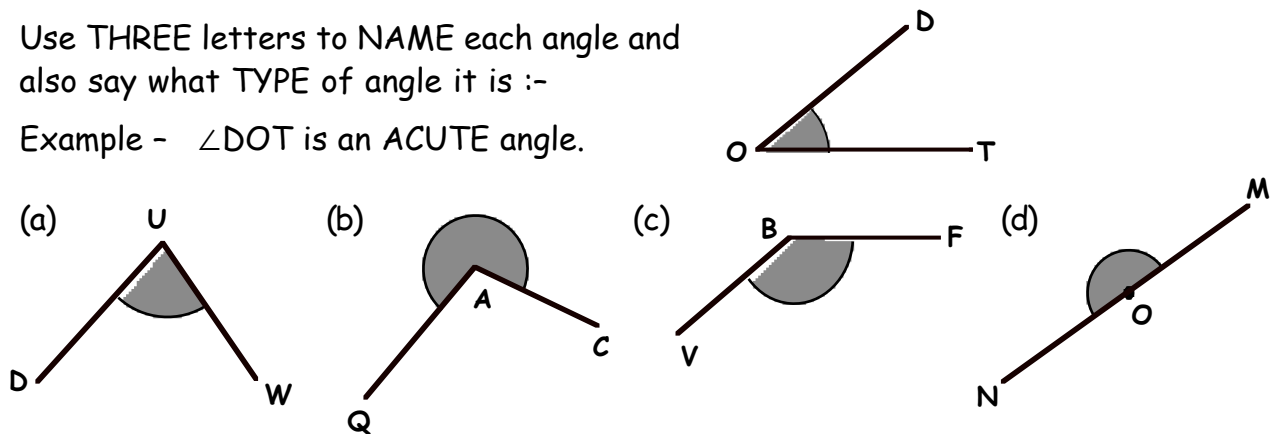
- (a) acute (b) obtuse (c) straight (d) right (e) reflex.

Exercise 2

1. Use 3 LETTERS each time to name the shaded angle :-
(remember to use the "∠" sign).



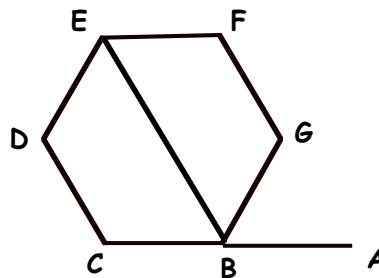
2. Use THREE letters to NAME each angle and also say what TYPE of angle it is :-
Example - $\angle DOT$ is an ACUTE angle.



3. Copy the diagram shown opposite.

(a) Mark :-

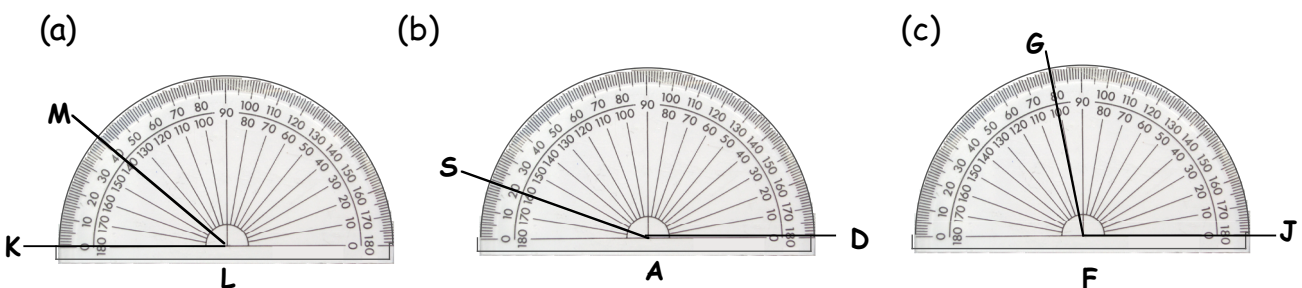
- (i) $\angle DCB$ with an x.
- (ii) $\angle FEB$ with an o.
- (iii) $\angle ABG$ with an *.



- (b) What TYPE of angle is :- (i) $\angle DEB$ (ii) $\angle EDC$ (iii) $\angle EBA$?

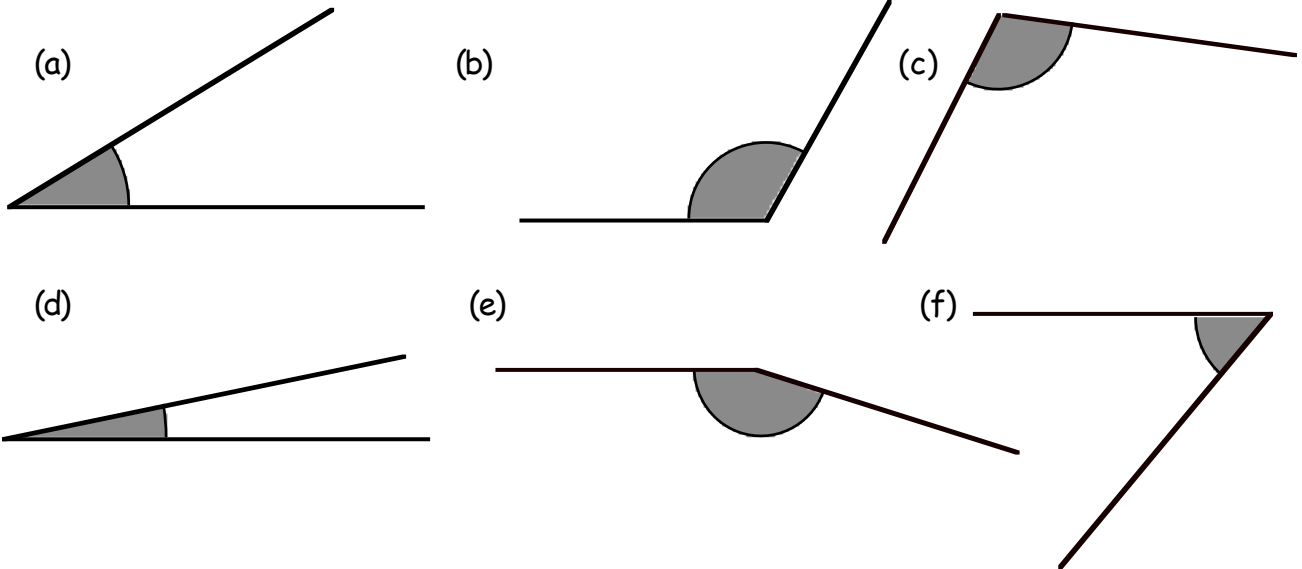
Exercise 3

1. Name and write down the size of each angle below :-



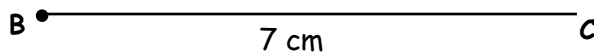
PROTRACTOR REQUIRED

2. For each shaded angle :- (i) estimate its size, (then)
 (ii) use a protractor to measure each angle.



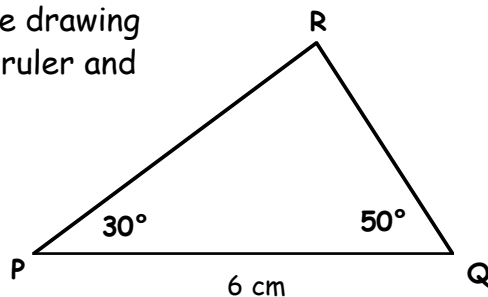
Exercise 4 You will require a RULER and a PROTRACTOR

1. Draw a 7 centimetre line and put a dot on the end (left side).



Use your protractor to show $\angle ABC = 40^\circ$.

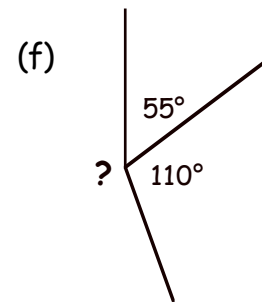
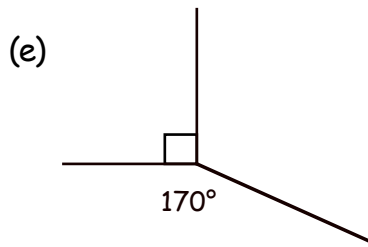
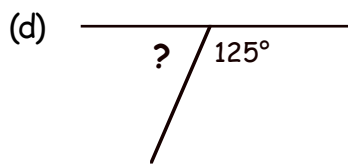
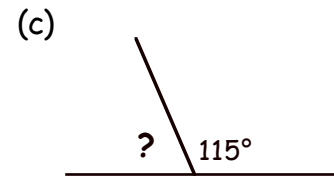
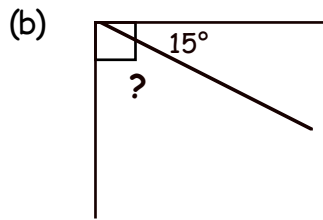
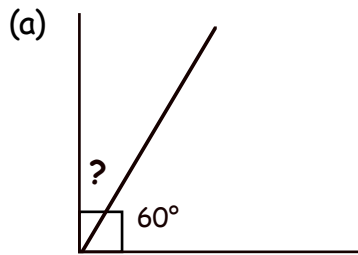
2. Use the same method to draw and label these angles :-
 (a) $\angle DEF = 60^\circ$ (b) $\angle PQR = 20^\circ$ (c) $\angle KLM = 120^\circ$ (d) $\angle STU = 160^\circ$.
3. Now draw and label these angles. (bit harder).
 (a) $\angle AGT = 45^\circ$ (b) $\angle NWD = 78^\circ$ (c) $\angle GFU = 115^\circ$ (d) $\angle CKP = 172^\circ$.
4. Make a full size accurate drawing of this triangle, using a ruler and protractor.



Exercise 5

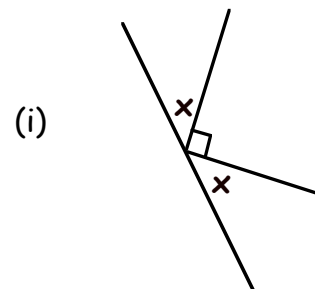
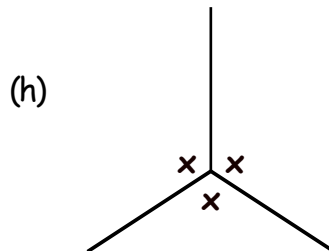
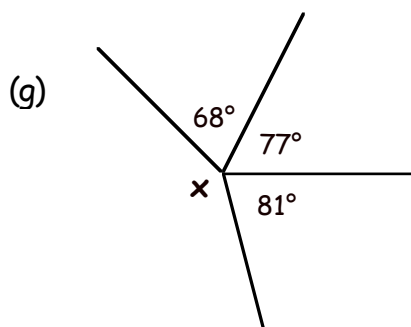
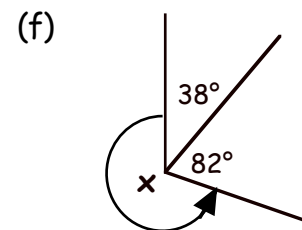
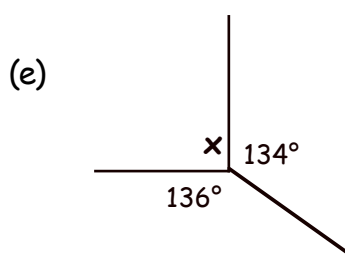
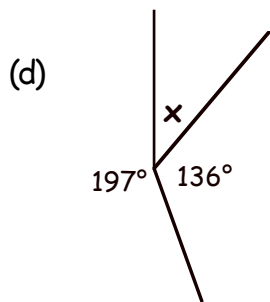
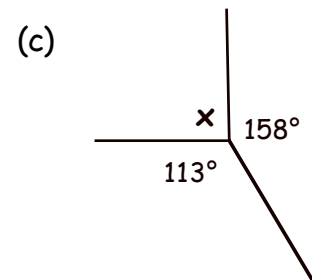
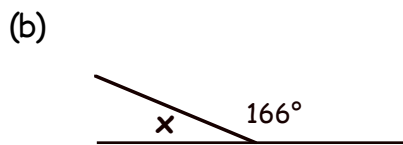
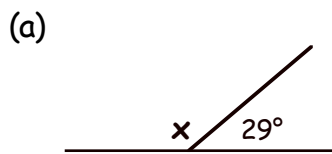


1. Calculate the size of the unknown angle in each of the following :-



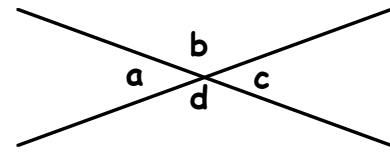
2. Shown below are some more angles, with more awkward numbers.

Find the value of x .

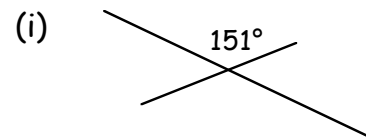
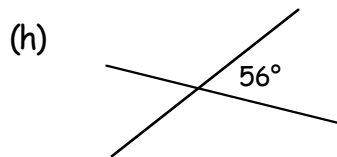
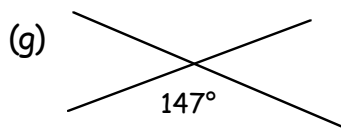
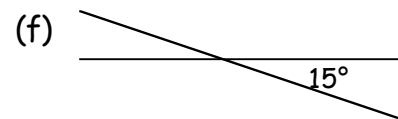
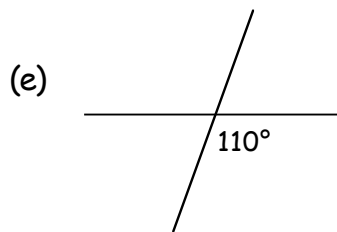
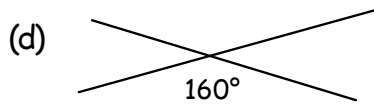
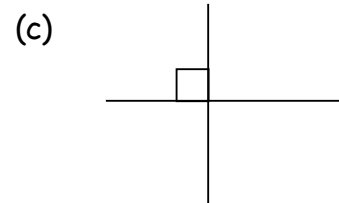
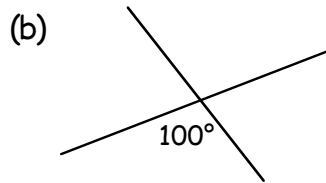
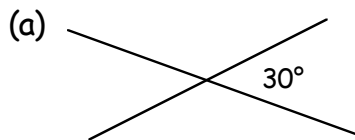


Exercise 6

- Shown are two lines which cross at a point.
 COPY and complete the following statements :-
 (a) Angle **a** and angle **d** are angles.
 (b) Angle **b** is vertically opposite to angle



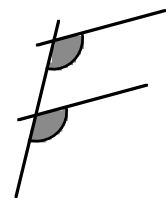
- Make a neat sketch of the following diagrams and fill in the sizes of ALL the angles



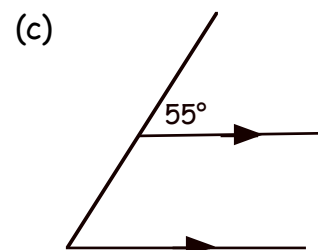
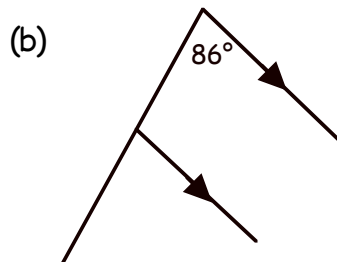
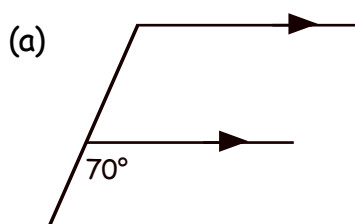
Exercise 7

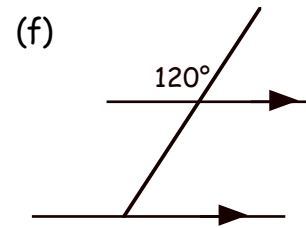
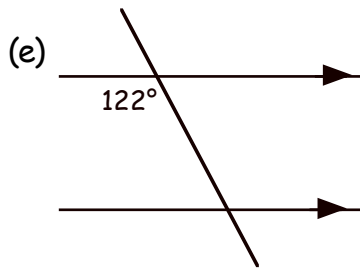
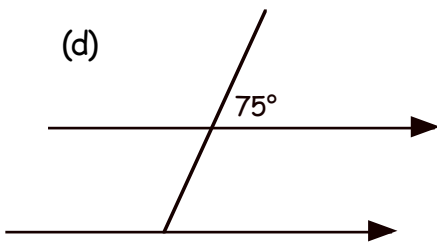
- COPY and complete the following statement :-
 "The proper name for F angles are angles".

- Look at the F shape. If the two shaded angles are equal, what must be true about the direction of two of the lines ?



- COPY the following diagrams and enter ALL the missing angles :-

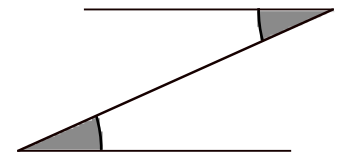




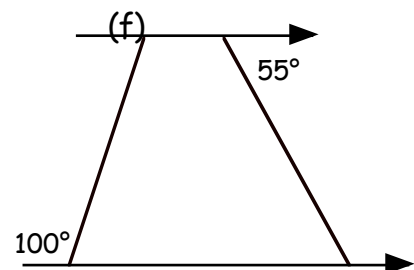
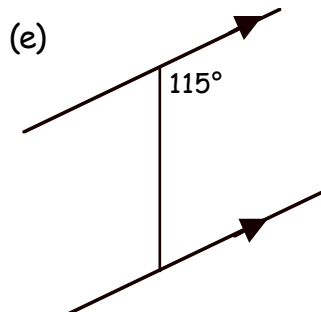
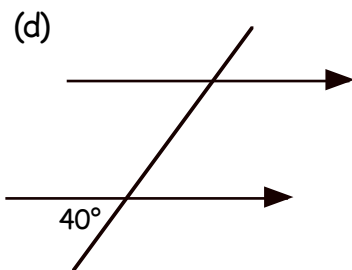
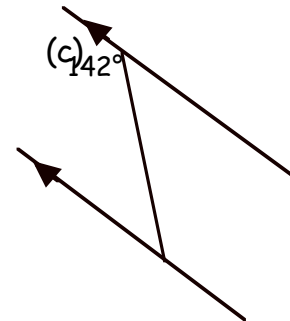
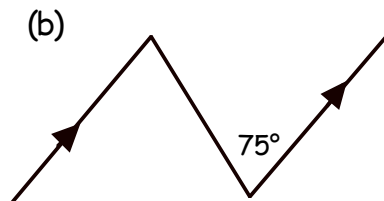
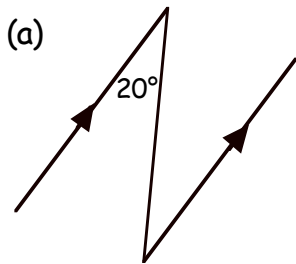
4. COPY and complete the following statement :-

"The proper name for Z angles are angles".

5. Look at the Z shape. If the two shaded angles are equal, what must be true about the direction of two of the lines ?

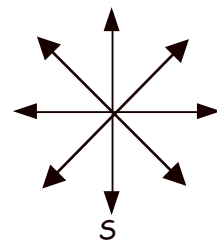


6. COPY these diagrams and fill in ALL the missing angles :-



Exercise 8

1. COPY and complete the remaining 7 points of the compass from the diagram shown.



2. How many degrees are there from :-

- (a) South to West (clockwise)
- (b) North to West (clockwise)
- (c) North to South-East (clockwise)
- (d) East to South-West (clockwise)
- (e) West to North (anti-clockwise)
- (f) North to South-West (anti-clockwise)
- (g) East to North-West (clockwise)
- (h) South to North-West (anti-clockwise)

3. (a) George was facing South. He then made a $\frac{1}{4}$ turn clockwise.
In which direction is George now facing ?



(b) The wind was blowing in a North-Westerly direction.
It then turned through an angle of 180° .



In which direction was the wind now blowing ?

(c) An aircraft carrier was sailing North-East.
The ship then turned through 90° clockwise.



In which direction did the ship end up travelling ?

(d) A rambler was travelling South-West.
She turned 90° anticlockwise and moved on.
She then turned 135° clockwise.



In which direction was she finally facing ?

(e) A jet is flying South-East.



The jet turns clockwise
and now faces North.

By how many degrees had the
jet turned through ?

4. The map shows Craggy Island.

The town of ABBIT lies at a point
around the middle.

(a) If I was in ABBIT, where would
I be looking towards if I faced :-

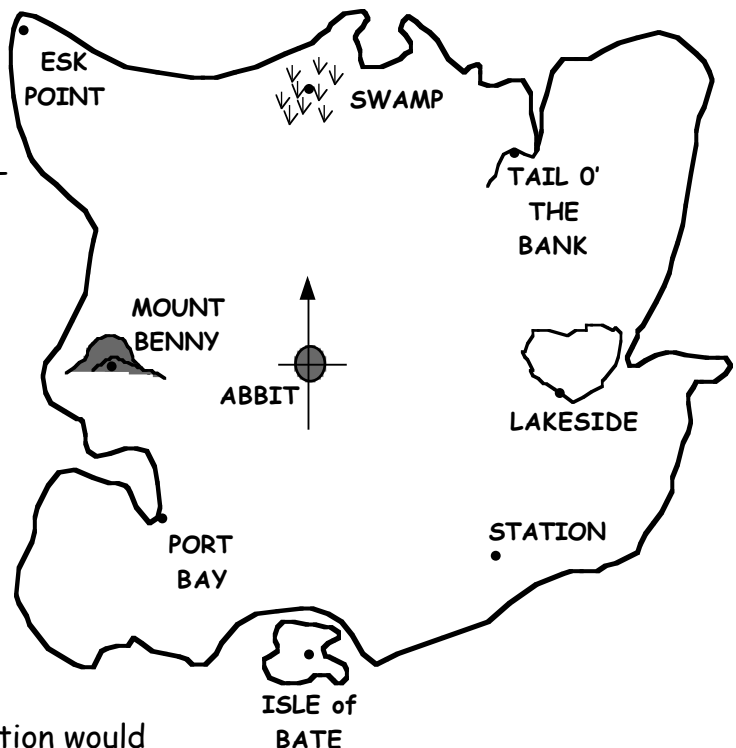
- (i) South ? (ii) East ?
- (iii) N West ? (iv) S East ?

(b) Where are the following in
relation to ABBIT :-

- (i) the SWAMP ?
- (ii) TAIL O' THE BANK ?
- (iii) MOUNT BENNY ?
- (iv) PORT BAY ?

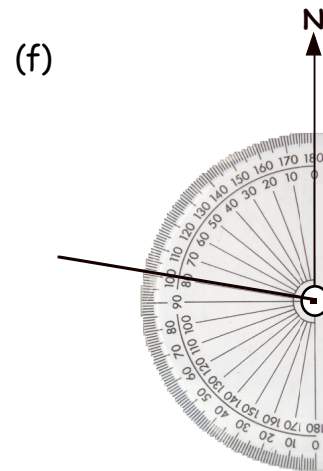
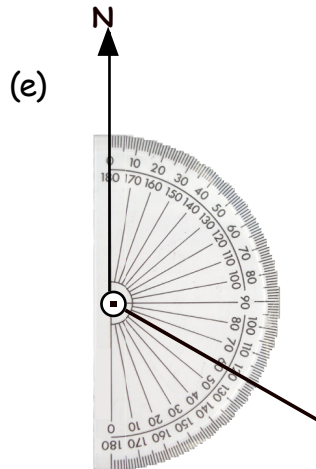
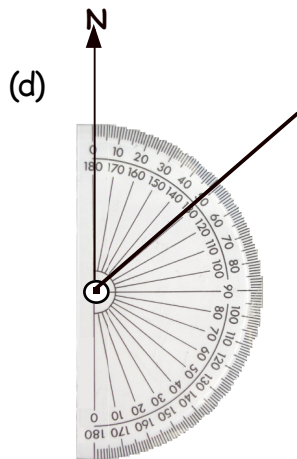
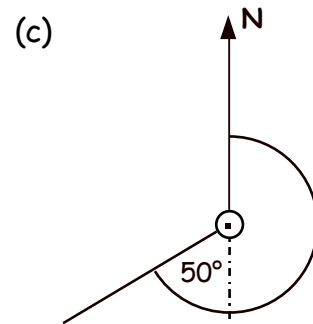
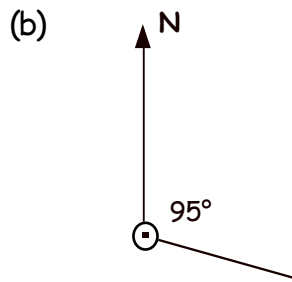
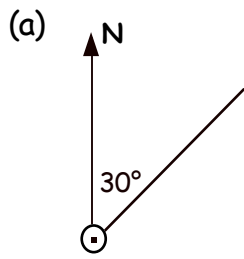
(c) From the station, in which direction would
I have to travel to go to :-

- (i) the Tail o' the Bank (ii) Esk Point ?

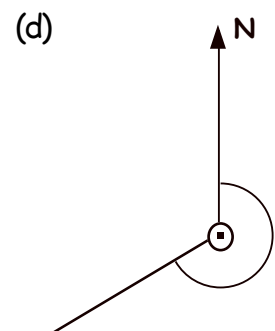
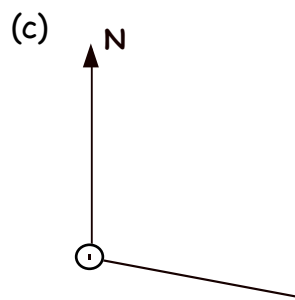
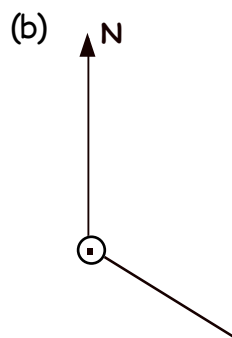
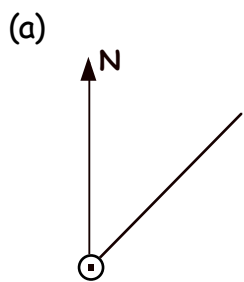


Exercise 9

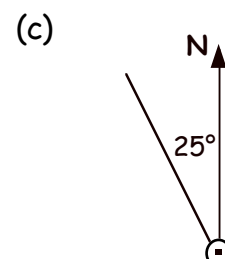
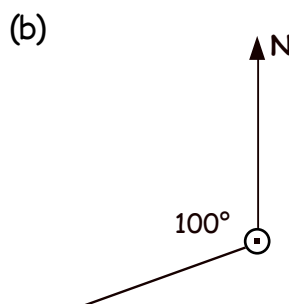
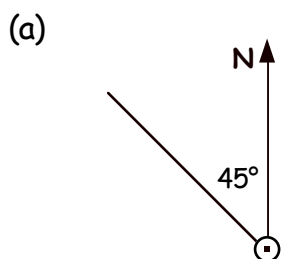
1. Write down the 3-figure bearing for each of the following :-



2. Use a **PROTRACTOR** to measure the 3-figure bearing of each angle :-



3. Write down the 3-figure bearing for each of the following directions :-



4. Write down the 3-figure bearing of the following directions :-

- (a) North-East (b) East (c) South (d) North-West

5. Mark a point on the page of your jotter and call it P.
Draw a NORTH LINE from your point.

Show, using a **PROTRACTOR**, a bearing of 040°.

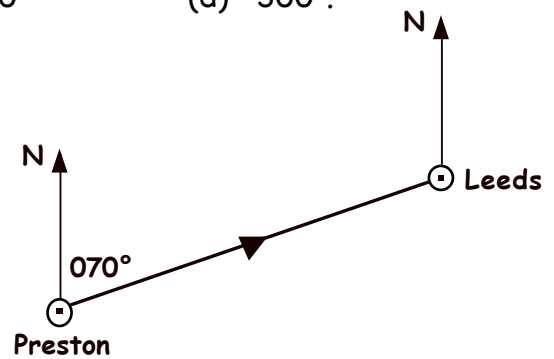


6. Repeat Question 5 to show each of the following bearings :-

- (a) 030° (b) 150° (c) 220° (d) 300°.

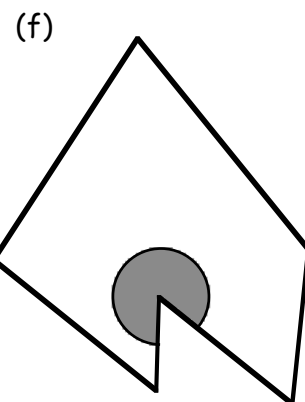
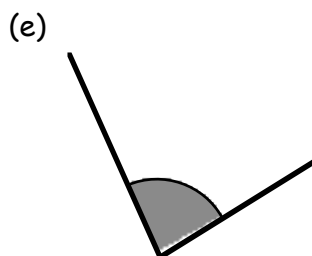
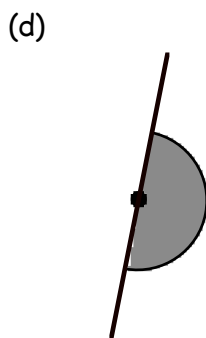
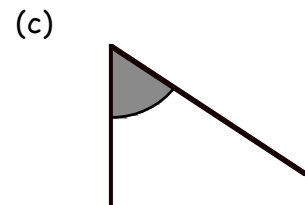
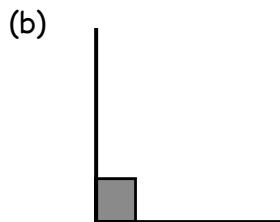
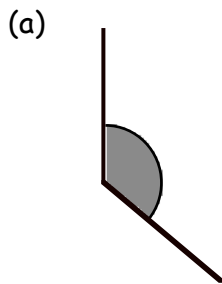
7. The bearing of Leeds from Preston is 070°.

Calculate (do not measure) the bearing of Preston from Leeds.



Revision Exercise

1. Use a word from " ACUTE, RIGHT, OBTUSE, STRAIGHT or REFLEX" to describe each type of shaded angle shown below :-



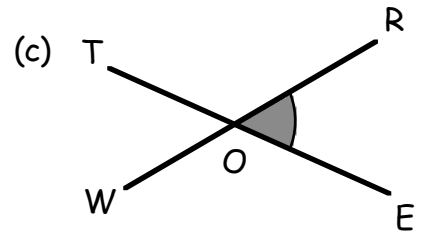
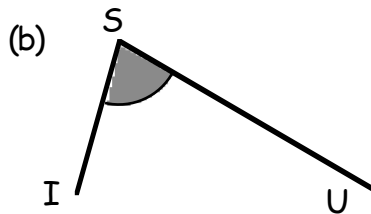
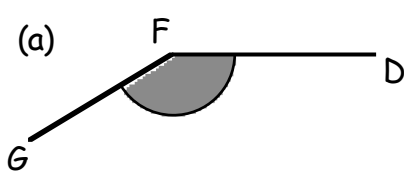
2. Look at the angle sizes listed below :-

64°, 132°, 90°, 179°, 210°, 4°, 149°, 97°, 30°, 57°, 112°, 180°.

Which angles are :-

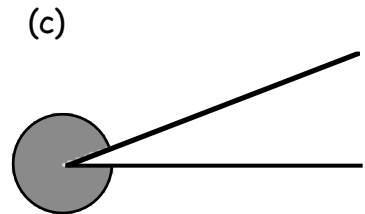
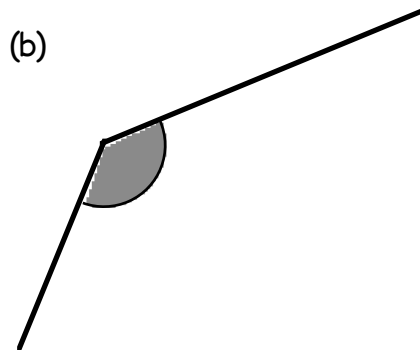
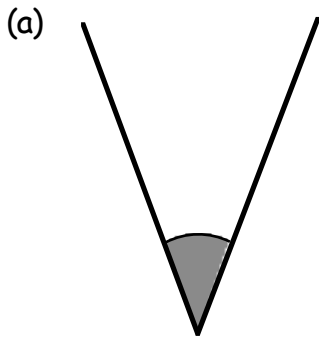
- (a) acute (b) obtuse (c) right (d) straight (e) reflex ?

3. Use 3 letters to name each shaded angle :-



4. For each shaded angle :- (i) estimate its size.

(ii) use a **PROTRACTOR** to measure the size of the angle.



5. Carefully draw each of the following angles and label them with their letters :-

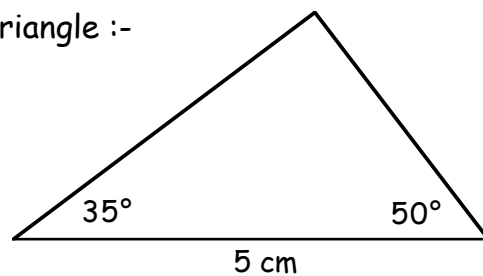
(a) $\angle ABC = 20^\circ$

(b) $\angle DEF = 130^\circ$

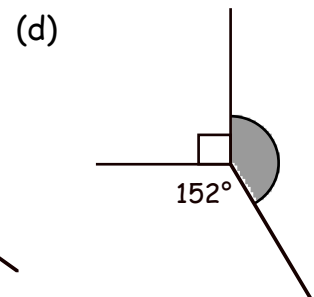
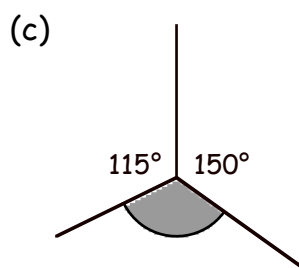
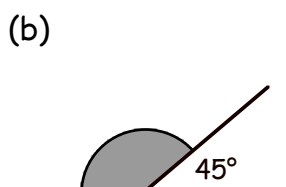
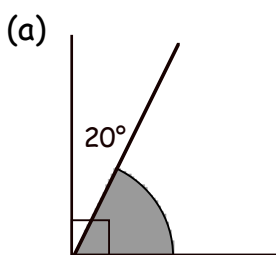
(c) $\angle PQR = 210^\circ$

6. Make a full size accurate drawing of this triangle :-

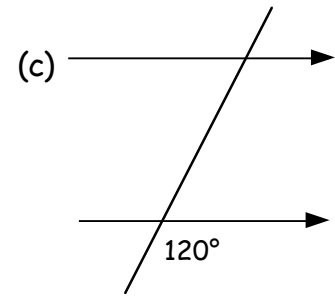
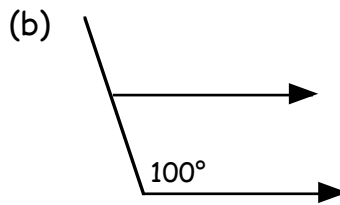
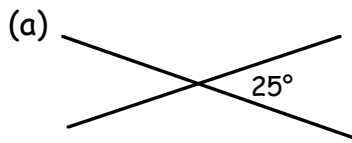
PROTRACTOR & RULER NEEDED



7. Calculate the sizes of the shaded angles :-



8. Copy each diagram and fill in the sizes of all the angles :-



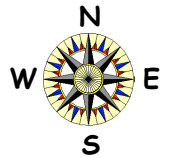
9. How many degrees are there from :-

(a) West to North (clockwise)

(b) South to East (clockwise)

(c) North to South-East (anti-clockwise)

(d) North-West to East (clockwise) ?



10.

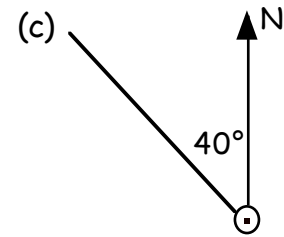
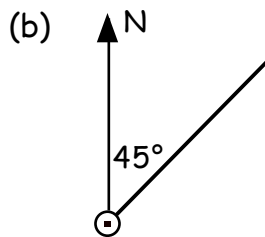
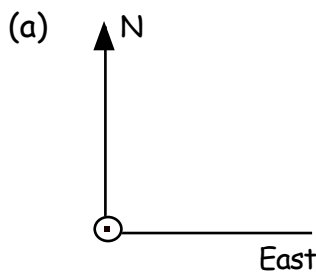


A pirate ship is sailing North-West.

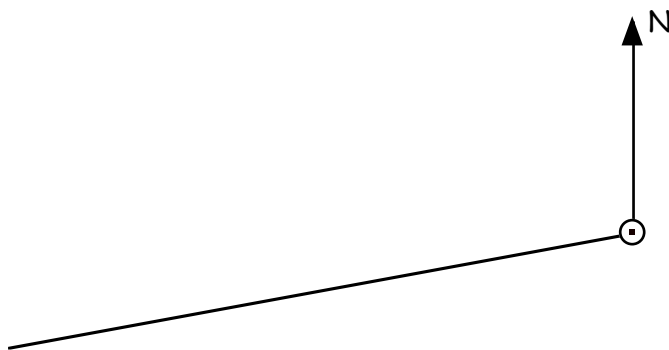
It then makes a 225° turn clockwise.

In which direction is the pirate ship now sailing ?

11. Write down the 3-figure bearing shown in each diagram :-



12. Use a **PROTRACTOR** to measure the 3-figure bearing of the direction shown below :-



13. Use a **PROTRACTOR** to show these 3-figure bearings :-

(a) 070°

(b) 230°

(c) 290° .