Exercise 1

1. Use a word from "ACUTE, RIGHT, OBTUSE, STRAIGHT or REFLEX" to describe these angles:
   (a)  (b)  (c)  (d)  (e)  (f)  (g)  (h)  

2. What type of angle is shaded in these triangles?
   (a)  (b)  (c)  (d)  

3. What type of angle is marked in these shapes:
   (a)  (b)  (c)  (d)  

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).
   (a) A
       B
       C
   (b) U
       M
       N
   (c) Y
       P
       T
   (d) H
       S
       E

2. Use THREE letters to NAME each angle and also say what TYPE of angle it is :-
   Example - ∠DOT is an ACUTE angle.
   (a) U
       W
       D
   (b) A
       C
       B
   (c) B
       F
       O
   (d) M
       N
       O

3. Copy the diagram shown opposite.
   (a) Mark :-
       (i) ∠DCB with an x.
       (ii) ∠FEB with an o.
       (iii) ∠ABG with an *.
   (b) What TYPE of angle is :-
       (i) ∠DEB
       (ii) ∠EDC
       (iii) ∠EBA ?

Exercise 3

1. Name and write down the size of each angle below :-
   (a)
   (b)
   (c)
PROTRACTOR REQUIRED

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

   (a) 
   (b) 
   (c) 
   (d) 
   (e) 
   (f) 

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.

   \[
   \begin{array}{c}
   P \\
   \hline
   6 \text{ cm} \\
   \hline
   Q
   \end{array}
   \]

   \[
   \begin{array}{c}
   R \\
   \hline
   30^\circ \\
   \hline
   50^\circ
   \end{array}
   \]
Exercise 5

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

   (a) [Diagram showing a right angle and an unknown angle]
   (b) [Diagram showing a right angle with an unknown angle of 15°]
   (c) [Diagram showing a right angle with an unknown angle of 115°]
   (d) [Diagram showing a right angle with an unknown angle of 125°]
   (e) [Diagram showing a right angle with an unknown angle of 170°]
   (f) [Diagram showing a right angle with an unknown angle of 110°]

2. Shown below are some more angles, with more awkward numbers. Find the value of \( x \).

   (a) [Diagram showing an angle of 29°]
   (b) [Diagram showing an angle of 166°]
   (c) [Diagram showing an angle of 158°]
   (d) [Diagram showing angles of 197° and 136°]
   (e) [Diagram showing an angle of 134°]
   (f) [Diagram showing angles of 38° and 82°]
   (g) [Diagram showing angles of 68°, 77°, and 81°]
   (h) [Diagram showing three angles marked with an \( x \)]
   (i) [Diagram showing three angles marked with an \( x \)]
Exercise 6

1. 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 .......... 

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

   (a) 
   (b) 
   (c) 
   (d) 
   (e) 
   (f) 
   (g) 
   (h) 
   (i) 

Exercise 7

1. Copy and complete the following statement:-
   “The proper name for F angles are ...................... angles”.

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

3. Copy the following diagrams and enter ALL the missing angles:-

   (a) 
   (b) 
   (c) 

   \[70°\] 
   \[86°\] 
   \[55°\]
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 :-
   (a)  
   (b)  
   (c)  
   (d)  
   (e)  
   (f)  

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 :-
   (a) 
   (b) 
   (c) 
   (d) 
   (e) 
   (f) 

2. Use a PROTRACTOR to measure the 3-figure bearing of each angle :-
   (a) 
   (b) 
   (c) 
   (d) 

3. Write down the 3-figure bearing for each of the following directions :-
   (a) 
   (b) 
   (c)
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 :-
   (a)   (b)   (c)   (d)
   (e)   (f)
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:

(a) F (b) S (c) T

4. For each shaded angle:

(i) estimate its size.

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

(a) (b) (c)

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

(a) \( \angle ABC = 20° \) (b) \( \angle DEF = 130° \) (c) \( \angle PQR = 210° \)

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

PROTRACTOR & RULER NEEDED

7. Calculate the sizes of the shaded angles:

(a) (b) (c) (d)
8. Copy each diagram and fill in the sizes of all the angles:
   (a) \[25^\circ\]  
   (b) \[100^\circ\]  
   (c) \[120^\circ\]

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:
   (a)  
   (b)  
   (c)  

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) \[070^\circ\]  
   (b) \[230^\circ\]  
   (c) \[290^\circ\].