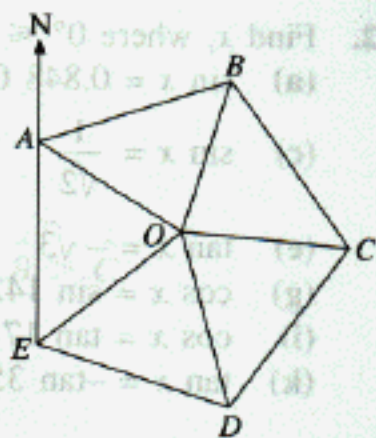


7. If $\frac{4}{3} \leq x \leq 5$ and $-7 \leq y \leq 2$,
- find the largest possible value of
 - $y - x$,
 - $x^2 + y^2$.
 - find the smallest possible value of
 - $y^2 - x^2$,
 - $x + y$.
8. Given that $2\frac{1}{2} \leq x \leq 10$ and $0.4 \leq y \leq 5$, calculate
- the largest possible value of $\frac{x}{y}$,
 - the smallest possible value of xy ,
 - the largest possible value of $2y - x^2$.
9. Given that x and y are integers and that $2 < x < 5$ and $4 < y < 9$, determine
- the maximum value of $\frac{x + y}{y - x}$,
 - the minimum value of $\frac{xy}{y - x}$,
 - the minimum value of $\frac{y^2}{x}$,
 - the maximum value of $(x - y)^2$.
10. Find the three integer values of x which satisfy the inequalities $5x - 8 \leq 3x + 8 \leq 4x + 2$. Given that p and q are any two of these three values of x , write down the values of p and q which would give
- $\frac{1}{p} + \frac{1}{q}$ its smallest value,
 - $\frac{1}{pq}$ its largest value,
 - $\frac{1}{p} - \frac{1}{q}$ its least value,
 - $\frac{p}{q}$ its greatest value.
11. (a) The mass of a packet of cookies is 200 g, correct to the nearest 10 g. What is the range within which the true mass of the packet of cookies lies?
- (b) A boy's height is recorded as 159 cm, correct to the nearest cm. Between what limits of accuracy may his height lie?
- (c) Find the limits between which the actual volume of a liquid, which is given as 2.34 l, correct to the nearest 0.01 l, lie.
- (d) A cross-country route of 4.8 km, measured to 1 decimal place, is to be covered. Find the limits between which the distance covered by any runner lie.

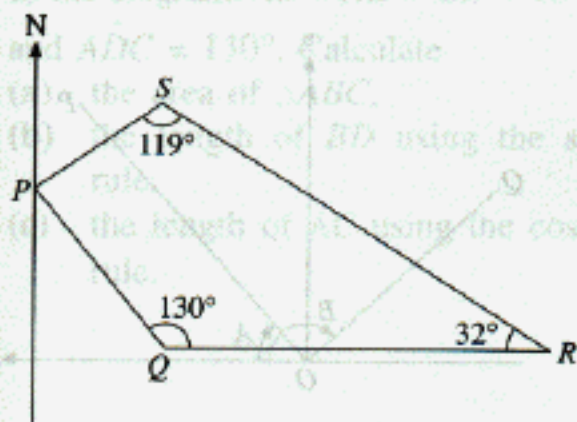
7. $ABCDE$ is a regular pentagon, with O as the centre.

Find the bearing of

- B from A ,
- C from A ,
- D from A ,
- E from A ,
- O from A ,
- B from O ,
- E from O ,
- D from C .



8.



In the diagram, R is due east of Q . Calculate the bearing of

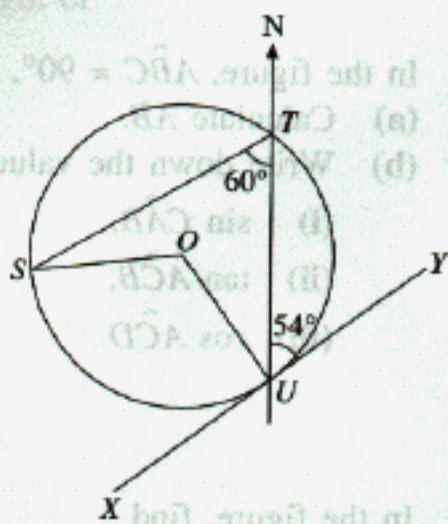
- P from Q ,
- S from P ,
- R from S .

9. In the diagram, XY is a tangent to the circle, with centre O , at U .

$\hat{TUY} = 54^\circ$ and $\hat{STU} = 60^\circ$.

Find the bearings of the following.

- S , T and U from O
- O from S , T and U
- S from U



10. Three points P , Q and R are such that the bearing of Q from P is 27° , the bearing of R from Q is 155° and $PQ = QR$. Find the bearing of

- P from Q ,
- Q from R ,
- R from P .

11. Express the following in terms of trigonometrical ratios of acute angles.

- $\tan 142^\circ$
- $\cos 123^\circ$
- $\sin 111^\circ$
- $-\cos 99^\circ$
- $-\tan 102^\circ \sin 91^\circ$
- $\sin 165^\circ \cos 156^\circ \tan 147^\circ$

