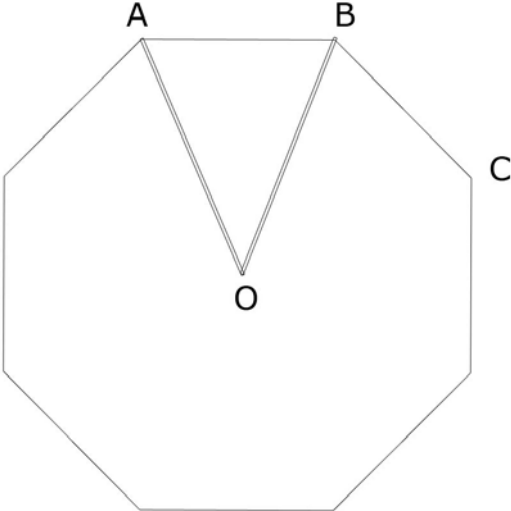


1. The diagram below shows a regular octagon with centre O .



a) What special name can be given to the triangle OAB ?

Answer [1]

b) What special name can be given to the quadrilateral $OABC$?

Answer [1]

c) Calculate the following angles,

i) ABC ,

Answer ° [1]

ii) OAB ,

Answer ° [1]

iii) AOB ,

Answer ° [1]

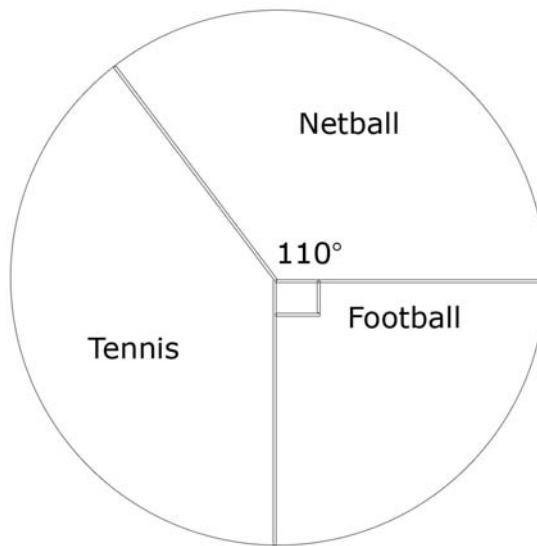
d) Describe fully the symmetry of the regular octagon.

Answer

..... [2]

2. The diagram below shows the favourite sports of 720 girls from a high school.

Not to scale



a) Calculate the angle for the sector marked tennis.

Answer ° [1]

b) What fraction of girls chose tennis as their favourite sport. Give your answer as a fraction in its simplest form.

Answer [2]

- c) Complete the table below to show the favourite sport for each girl.

Sport	Girls
Netball	220
Football
Tennis

[2]

- d) State the mode sport chosen.

Answer [1]

- e) Find the percentage of girls who chose netball as their favourite sport.

Answer % [1]

- f) In an all boys school 160 boys chose football as their favourite sport and 400 chose tennis as their favourite sport. Write this as a ratio **football:tennis**, in its lowest common ratio.

Answer : [2]

3. A plane leaves Mumbai at 0940 (Mumbai time) and takes $8\frac{1}{2}$ hours to fly to London.

- a) London time is 5 hours earlier than Mumbai time.
What time does the plane arrive in London (London time).

Answer [3]

- b) The average speed of the plane is 830 km/h.
Calculate the distance from Mumbai to London.

Answer km [2]

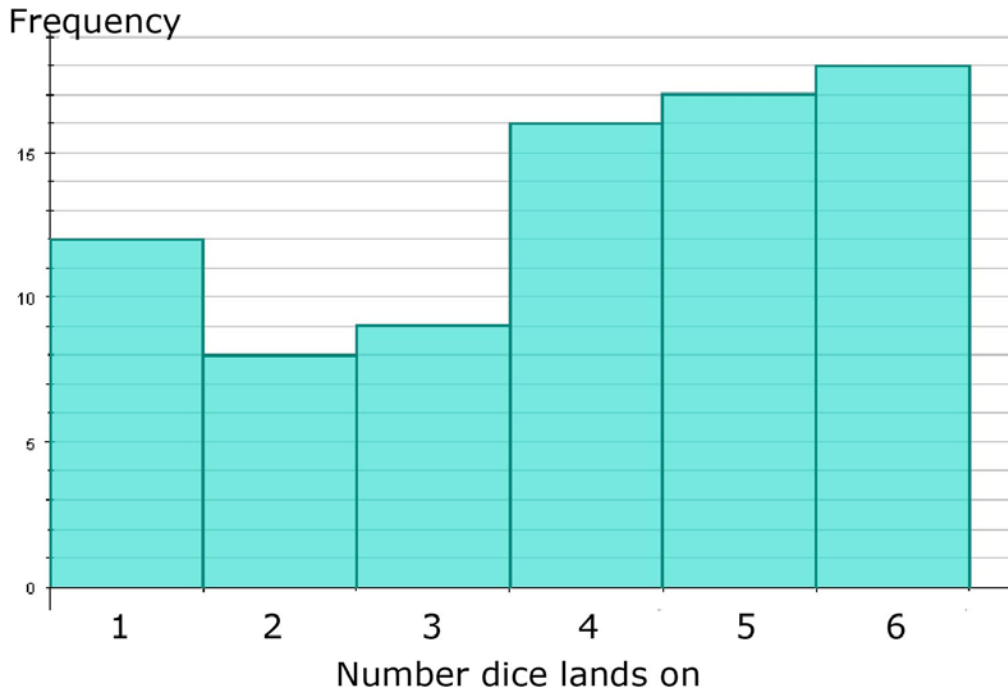
- c) The cost of an economy ticket on the plane is \$1100 per adult ticket and \$750 per child ticket.
Calculate the cost of a family of 2 adults and 2 children traveling from London to Mumbai.

Answer \$..... [2]

- d) A business class ticket costs 30% more than a economy ticket.
Calculate the cost of an adult business class ticket.

Answer \$..... [2]

4. Bernie rolls a dice and records the number it lands on. He draws a bar chart of the results.



- a) How many times did he roll the dice?

Answer [2]

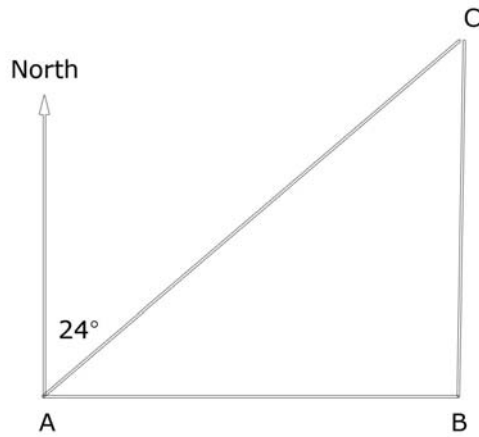
- b) Calculate the mean score for this dice.

Answer [3]

- c) According to Bernie's results, what is the probability of him rolling a 1?
Give your answer as a fraction in its lowest terms.

Answer [2]

5. The diagram below shows two towns A , B and C . C is directly north of B , and B is directly east of A .



Not to scale

- a) The bearing of C from A is 024° .
Calculate A 's bearing from C .

Answer $^\circ$ [2]

- b) The distance of AC is known to be 28 km, correct to the nearest km. Find the limits within which AC can lie.

Answer km $\leq AC <$ km [2]

- c) Using the measurement of $AC = 28$ km, calculate the distance of BC .

Answer km [3]

6. a) The factors of 24 are 1,2,3,4,6,8,12 and 24.

i) List all the factors of 36.

Answer [2]

ii) List all the factors of 15.

Answer [2]

b) Written as its prime factors $24 = 2^3 \times 3$.

i) List the prime factors of 36.

Answer [2]

ii) List the prime factors of 15.

Answer [2]

c) i) Find the highest common factor of 36 and 104.

Answer [2]

ii) Find the lowest common multiple of 36 and 104.

Answer [2]

Answers

1. a) Isosceles triangle
b) Kite
c) i) 135° ii) 67.5° iii) 45°
d) 8 lines of symmetry and rotational symmetry of order 8.
2. a) 160°
b) $\frac{4}{9}$
c) Football 180, tennis 320.
d) Tennis
e) 30.6%
f) 2:5
3. a) 13 10
b) 7055 km
c) \$370
d) \$1430
4. a) 80
b) 3.9
c) $\frac{12}{80} = \frac{3}{20}$

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5. a) 204°
b) $27.5\text{km} \leq AC < 28.5\text{km}$
c) 25.6 km
6. a) i) 1,2,3,4,6,8,12,18,36 ii) 1,3,5,15
b) i) $2^2 \times 3^2$ ii) 3×5
c) i) 8 ii) 936