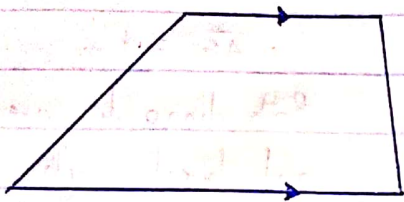


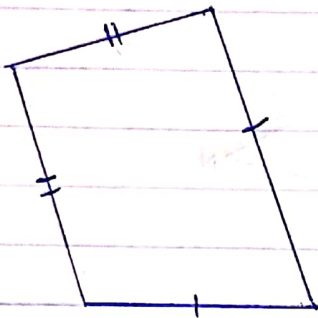
Level 1

1.



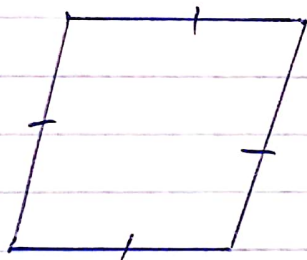
Trapezoid.

2.



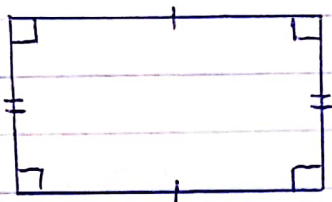
Kite

3.



Rhombus.

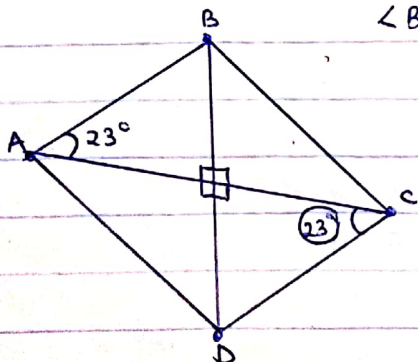
4.



Rectangle.

Level 2.

5.



$$\angle BAC = 23^\circ$$

$$\angle BAC = \angle ACD = 23^\circ \text{ (Alternate angles)}$$

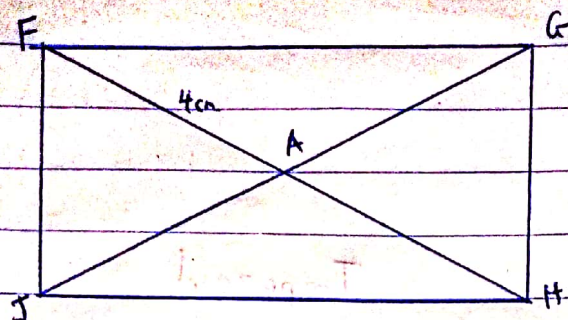
$$\text{Let } \angle DAC = x = \angle BCA \text{ (Alternate angles)}$$

$$2x + 46^\circ = 180^\circ$$

$$2x = 134$$

$$x = \angle DAC = \underline{\underline{67^\circ}}$$

6.

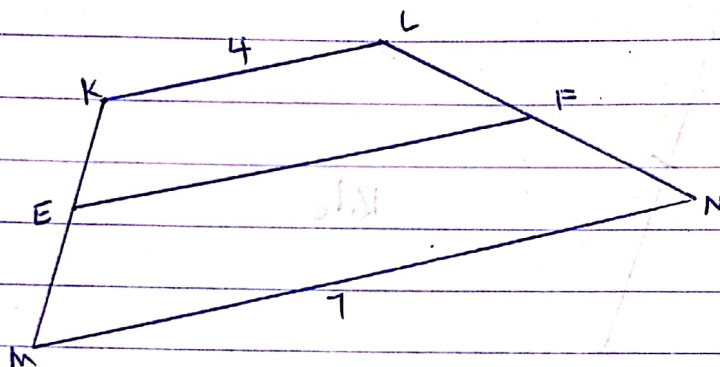


$$\overline{AF} = 4\text{cm}$$

$$\overline{AG} = 4\text{cm}$$

Both diagonals are equal and bisect each other.

7.



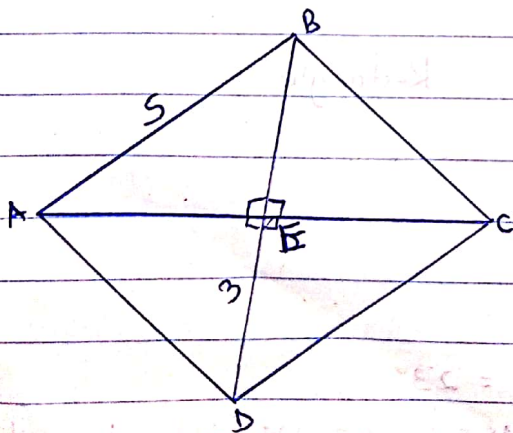
Mid segment, $EF = \frac{4+7}{2}$

$$= \frac{11}{2}$$

$$= 5.5$$

Level 3.

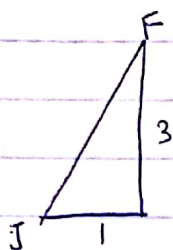
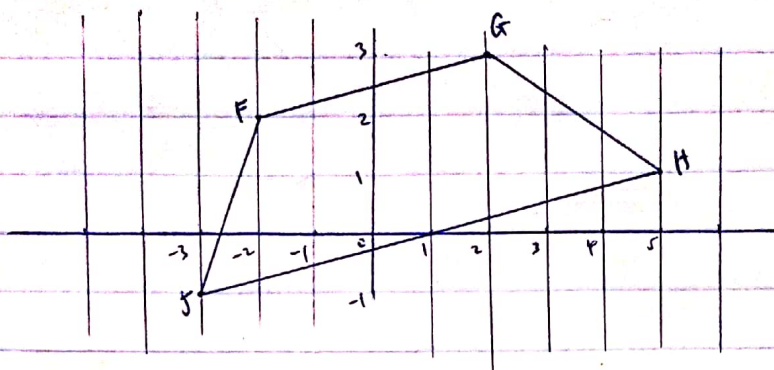
8.



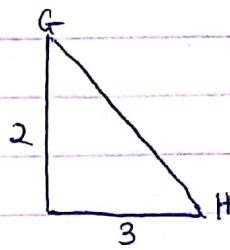
$$\overline{BE} = \overline{DE} = 3$$

$$\overline{AE} = \overline{EC} = \sqrt{5^2 - 3^2} = \sqrt{16} = 4$$

9.



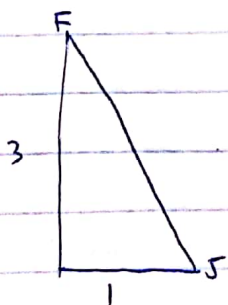
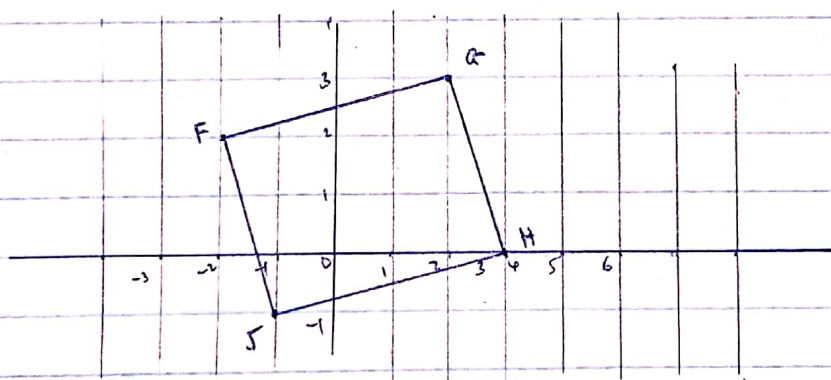
$$\overline{JF} = \sqrt{3^2 + 1^2} = \sqrt{10}$$



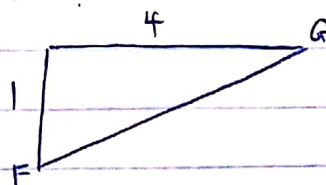
$$\overline{GH} = \sqrt{3^2 + 2^2} = \sqrt{13}$$

$\overline{JF}$ is not equal to $\overline{GH}$ thus the trapezoid is not isosceles.

10.



$$\overline{FJ} = \sqrt{3^2 + 1^2} = \sqrt{10}$$



$$\overline{FG} = \sqrt{1^2 + 4^2} = \sqrt{17}$$

$\overline{FJ}$ is not equal to $\overline{FG}$ thus the shape is not a square.