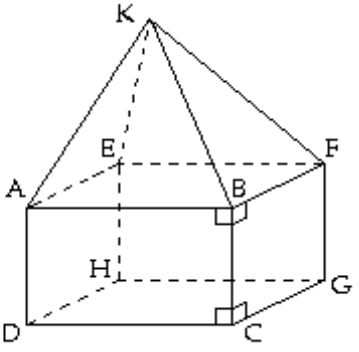
SHORT ANSWER. You must show all work to receive full credit.

Refer to the figure to classify the statement as true or false.



1) $\overleftrightarrow{AB}$ and $\overleftrightarrow{CF}$ are parallel lines.

Answer: False

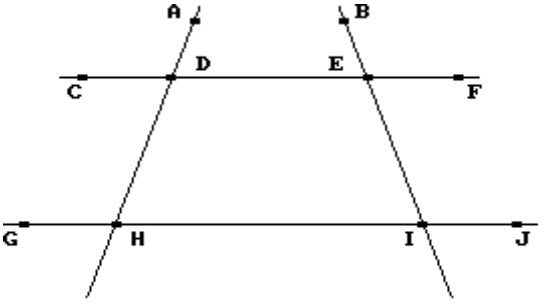
2) $\overleftrightarrow{AB}$ and $\overleftrightarrow{CF}$ are intersecting lines.

Answer: False

3) The intersection of planes AEF, FGC, and BCD is point B.

Answer: True

Refer to this figure to answer the question.



4) Is point C on $\overleftrightarrow{DE}$?

Answer: Yes

5) What are the endpoints of $\overrightarrow{HI}$?

Answer: H

6) What are the endpoints on $\overleftrightarrow{DE}$?

Answer: None

7) Are $\overleftrightarrow{HD}$ and $\overleftrightarrow{HA}$ the same line?

Answer: Yes

8) What is the vertex of ∠DEI?

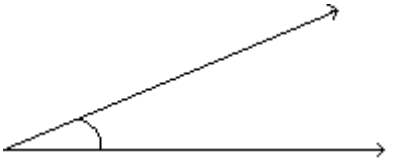
Answer: E

Tell whether the angle is acute, right, obtuse, or straight.

9)

Answer: Right

10)



Answer: Acute

11)

Answer: Obtuse

12)

Answer: Straight

Answer the question.

13) What is the angle between the hour and the minute hands if the time is 8:20?

Answer: 130°

MULTIPLE CHOICE. Choose the one alternative that best completes the statement or answers the question.

Choose the terminology that best classifies the given figure.

14)

A) Concave curve

B) Simple closed curve

C) Polygon

D) Convex curve

Answer: B

15)

A) Closed curve

B) Simple closed curve

C) Simple curve

D) None of the above

Answer: D

16)

A) Simple curve

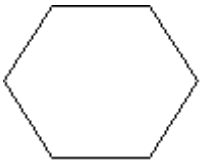
B) Simple closed curve

C) Closed curve

D) None of the above

Answer: C

17)



A) Simple polygon

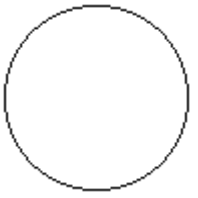
B) Convex polygon

C) Closed polygon

D) All of the above

Answer: D

18)



A) Polygon

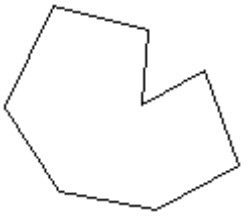
B) Simple concave curve

C) Simple closed convex curve

D) Concave polygon

Answer: C

19)



A) Polygon

B) Convex polygon

C) Concave polygon

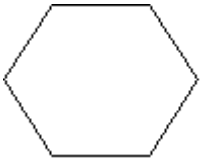
D) Simple closed curve

Answer: C

SHORT ANSWER. You must show all work to receive full credit.

Decide whether the figure is convex or concave.

20)

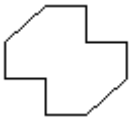


Answer: Convex

21)

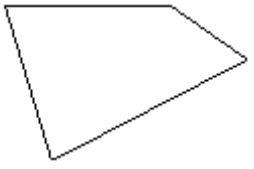
Answer: Concave

22)



Answer: Concave

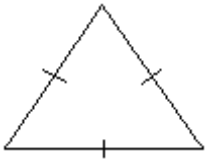
23)



Answer: Convex

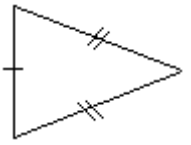
Identify the triangle as scalene, isosceles, or equilateral.

24)



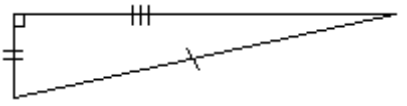
Answer: Equilateral

25)



Answer: Isosceles

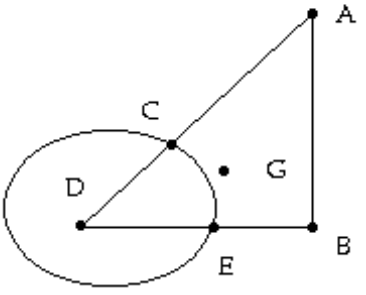
26)



Answer: Scalene

Use the labeled points in the following drawing to answer the question.

- F



27) Which points belong to the triangle ABD?

Answer: A, C, D, E, B

28) Which points belong to the exterior of the ellipse?

Answer: F, A, G, B

29) Which points belong to the intersection of the triangle and the ellipse?

Answer: C, E

30) Which points belong to the exterior of the triangle and the ellipse?

Answer: F

Find the requested angle.

31) Complement of 57°

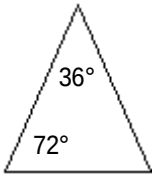
Answer: 33°

32) Supplement of 73°

Answer: 107°

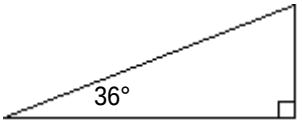
Find the missing angle.

33)



Answer: 72°

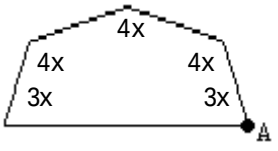
34)



Answer: 54°

Determine the measure of the interior angle at vertex A.

35)



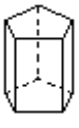
Answer: 90°

Give the name of the solid.

36)

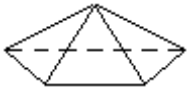
Answer: Right circular cone

37)



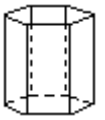
Answer: Right pentagonal prism

38)



Answer: Trapezoidal pyramid

39)

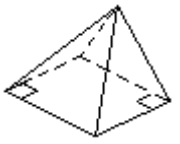


Answer: Right hexagonal prism

40)

Answer: Oblique circular cylinder

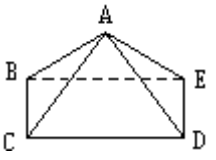
41)



Answer: Oblique square pyramid

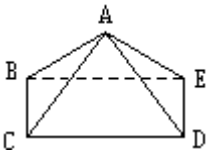
List the indicated feature of the figure.

42) The edges of



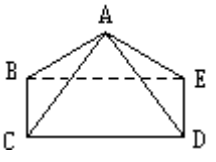
Answer: AB, AC, AD, AE, BE, BC, CD, DE

43) The vertices of



Answer: A, B, C, D, E

44) The faces of



Answer: ABC, ABE, ADE, ACD, BCDE

Use Euler's formula to answer the question.

45) A polyhedra has 12 vertices and 19 faces. How many edges does it have?

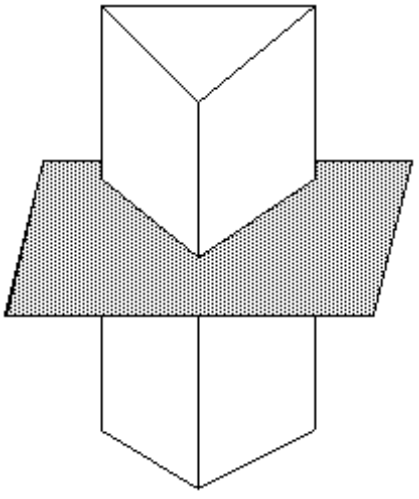
Answer: 29

46) A polyhedra has 31 edges and 21 faces. How many vertices does it have?

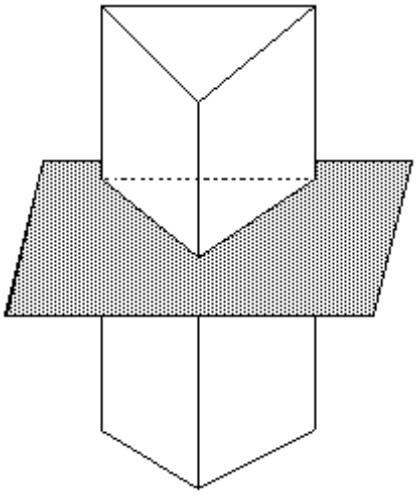
Answer: 12

Identify the intersection of the plane with the solid.

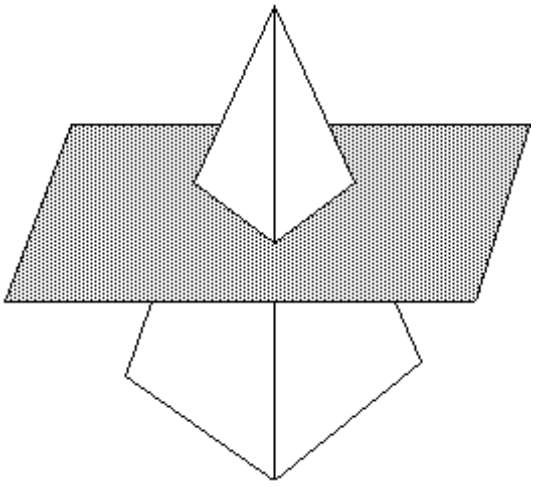
47) Triangular prism



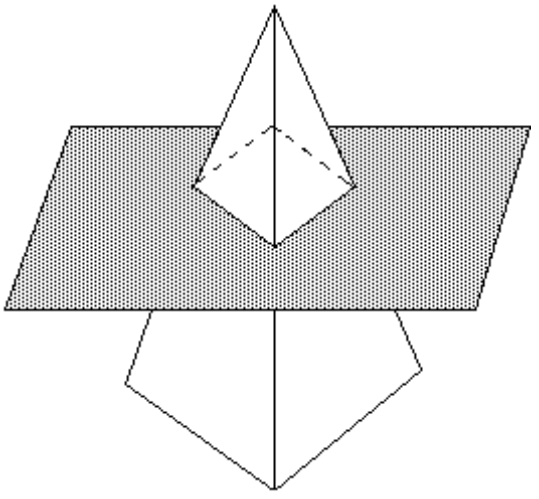
Answer: Triangle



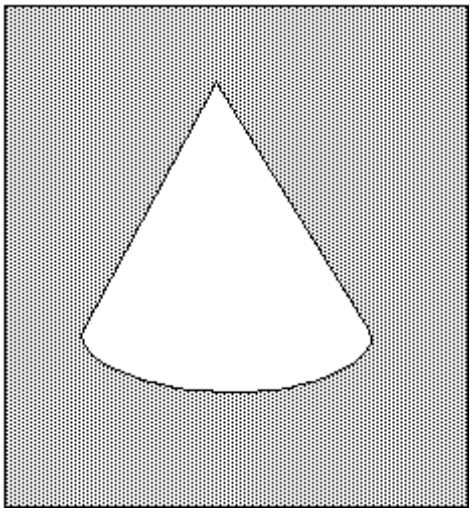
48) Square pyramid



Answer: Quadrilateral

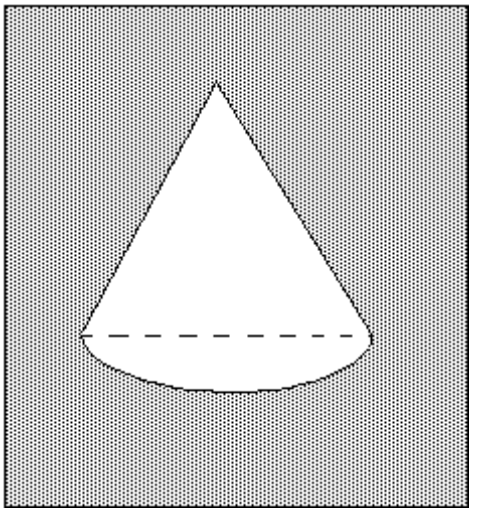


49) Right circular cone



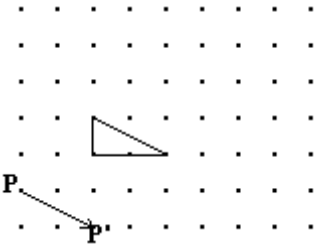
Plane is perpendicular to the base.

Answer: Triangle

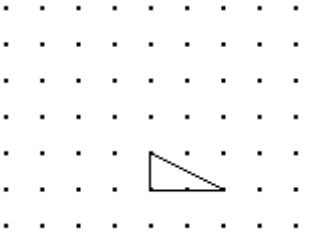


Solve the problem.

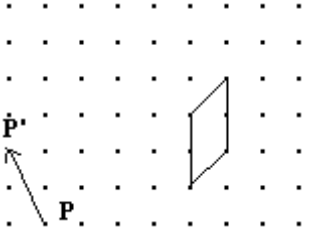
50) Find the image of the given figure under the translation that takes P to P'.



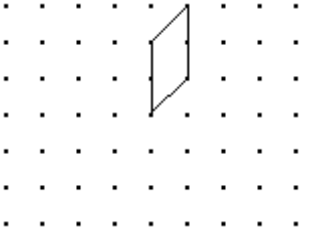
Answer:



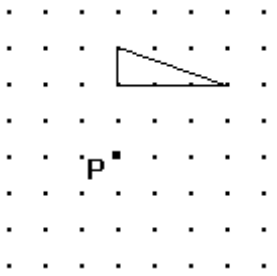
51) Find the image of the given figure under the translation that takes P to P'.



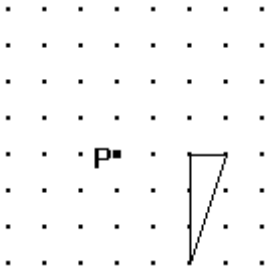
Answer:



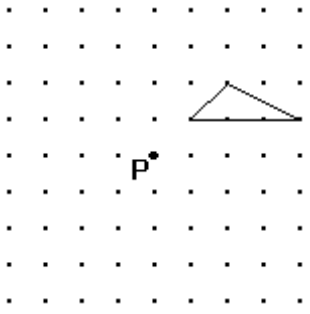
52) Find the image of the given figure under a 90° clockwise rotation about P.



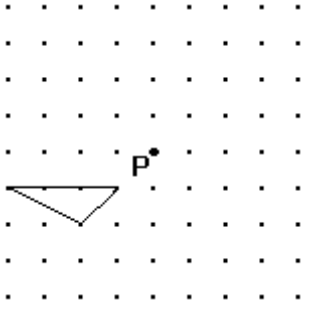
Answer:



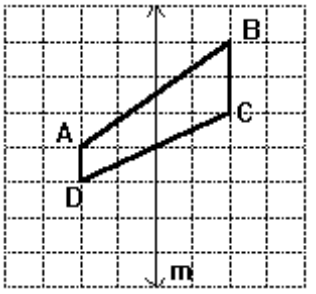
53) Find the image of the given figure under a 180° rotation about P.



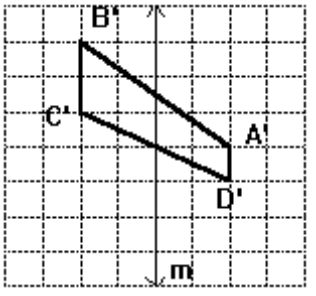
Answer:



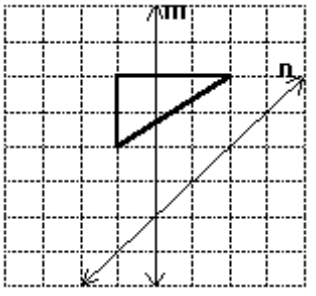
54) Find the image of the given figure under a reflection across the mirror line m.



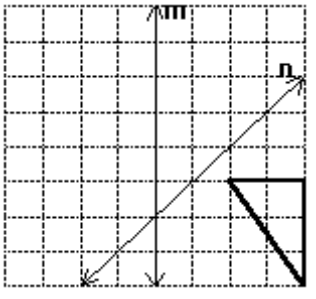
Answer:



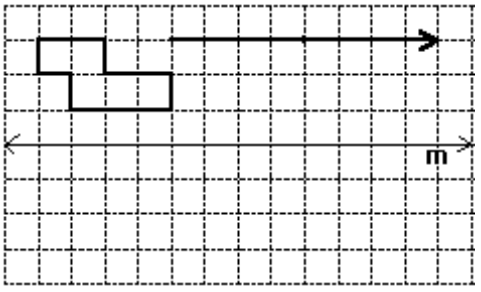
55) Find the figure that results from reflecting the given figure across the line m, and then reflecting the result across line n.



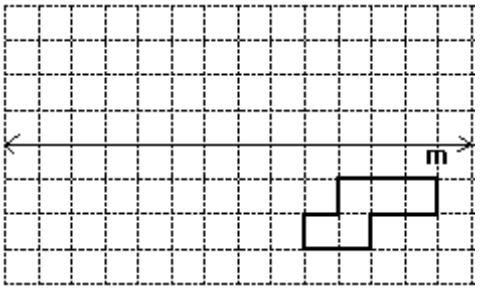
Answer:



56) A glide reflection is defined by the given slide arrow and the line of reflection m. Find the image of the given figure under this glide reflection.



Answer:

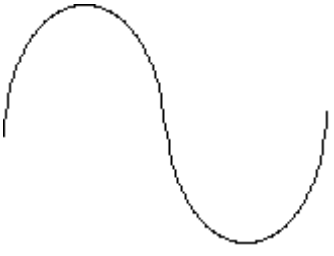


Describe all symmetries of the figure shown.

57)

Answer: 4 lines of symmetry, 90° rotation symmetry

58)



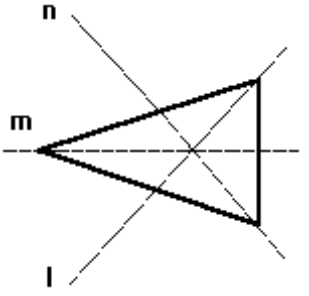
Answer: 180° rotation symmetry

59)

Answer: 1 line of symmetry

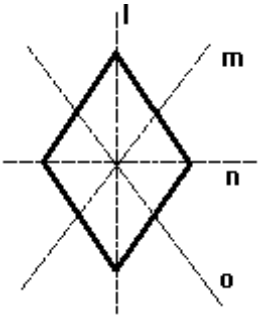
Solve the problem.

60) Which of the lines in the picture are lines of symmetry of the given figure?



Answer: m

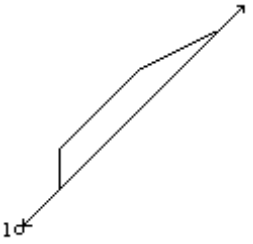
61) Which of the lines in the picture are lines of symmetry of the given figure?



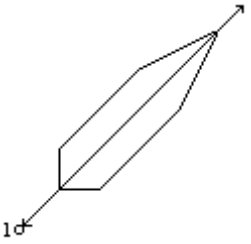
Answer: l and n

Complete the sketch so that it has the indicated symmetry.

62) Complete the sketch so that it has line symmetry about l.

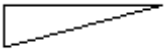


Answer:

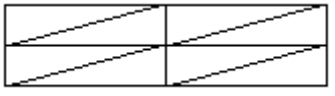


Draw a tessellation of the plane using the given figure. If the figure does not tessellate the plane, state this.

63)

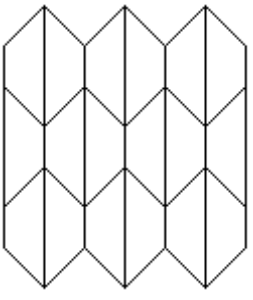


Answer:

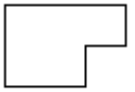


64)

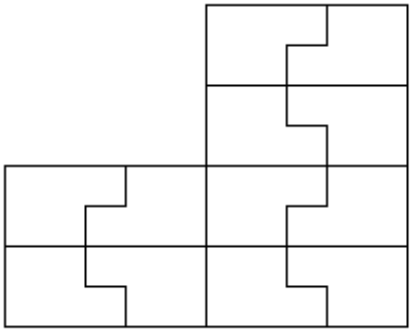
Answer:



65)



Answer:



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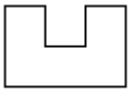
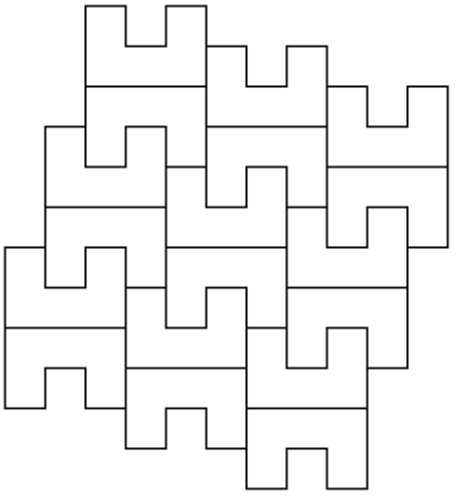


Answer:



Answer the question.

67) Draw a semiregular tiling using octagons and squares.

Answer: The side of the square is equal to an edge of the octagon. In row 1, place squares between the octagons. In row 2, place squares directly under octagons and octagons directly under squares. In row 3, repeat row 1.

68) Draw any hexagon except a regular hexagon and make a tiling from it.

Answer: Answers will vary.