MATHEMATICS MCQ BOOKLET

Grade 9 · Chapter 9 · Geometry and Polygons

FBISE / National Book Foundation Model Textbook companion

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Independent MCQs on proof language, similarity, area and volume ratios, regular polygons, and loci. Not copied from the book exercise. Total: 108 questions. Each item has four options, the correct letter, and a short explanation of why it is correct.

A. Important / Main Topics

1. Demonstrative geometry proves statements using:

(A) logical reasoning from given facts, axioms and earlier theorems
(B) guesswork only
(C) measurement with a ruler only
(D) majority vote

Correct Answer: A

Explanation: A proof is a chain of reasons, not an informal sketch.

2. Inductive reasoning works from:

(A) a general law to a particular case
(B) specific observations toward a general claim
(C) axioms alone with no examples
(D) converse statements only

Correct Answer: B

Explanation: Induction generalises from instances; those general claims still need a proof to be theorems.

3. Deductive reasoning works from:

(A) one example to a universal law
(B) conjecture with no premises
(C) a general result to a particular conclusion
(D) open sentences only

Correct Answer: C

Explanation: Once a general rule is known, deduction applies it to a specific case.

4. A mathematical statement is a meaningful sentence that is:

(A) always true
(B) always an open sentence
(C) never symbolic
(D) either true or false

Correct Answer: D

Explanation: Truth value is required; a sentence that cannot be judged true or false is not a statement.

5. “The product of x and y is 10” with x, y unspecified is:

(A) an open sentence
(B) a true theorem
(C) an axiom
(D) a corollary

Correct Answer: A

Explanation: Without values, it is not yet true or false.

6. A proposition consists of premise, argument, and:

(A) a diagram only
(B) conclusion
(C) a conjecture only

(D) an intercept

Correct Answer: B

Explanation: The conclusion follows if the premises are true and the argument is valid.

7. The two parts of a mathematical statement in geometry are often called:

(A) base and height
(B) radius and apothem
(C) hypothesis and conclusion
(D) locus and path

Correct Answer: C

Explanation: The hypothesis is what is assumed; the conclusion is what must be shown.

8. An axiom is a statement that is:

(A) proved from a theorem
(B) always false
(C) only about polygons
(D) accepted as true without proof

Correct Answer: D

Explanation: Axioms are starting assumptions; later results rest on them.

9. The word axiom comes from Greek axioma, meaning a claim taken as:

(A) true without proof
(B) false until measured
(C) a conjecture only
(D) a converse

Correct Answer: A

Explanation: That is the textbook etymology used in the unit.

10. Axioms about numbers (such as a = a) are also called:

(A) loci
(B) properties
(C) polygons
(D) medians

Correct Answer: B

Explanation: Axioms about numbers (such as a = a) are also called properties.

11. A postulate is an axiom that is specifically about:

(A) arithmetic only
(B) statistics only
(C) geometry
(D) logarithms

Correct Answer: C

Explanation: The unit treats geometric assumptions as postulates.

12. Through two distinct points there passes:

(A) no line
(B) exactly two lines
(C) a unique circle only
(D) exactly one line

Correct Answer: D

Explanation: That uniqueness is a standard incidence postulate.

13. Through a single point there pass:

(A) infinitely many lines
(B) no lines
(C) exactly two lines

(D) exactly one line

Correct Answer: A

Explanation: You may draw as many directions as you like through one point.

14. A conjecture is a statement believed true that:

(A) has already been proved
(B) still needs a proof
(C) is an axiom
(D) is always false

Correct Answer: B

Explanation: Until it is proved, it remains a conjecture, not a theorem.

15. A theorem is a statement that:

(A) cannot be proved
(B) is assumed with no argument
(C) can be proved by logical reasons
(D) is an open sentence

Correct Answer: C

Explanation: The Greek root theorien is linked with contemplating a result that is then established.

16. A corollary is a result that:

(A) contradicts a theorem
(B) is always an axiom
(C) needs no reason
(D) follows quickly from a theorem already proved

Correct Answer: D

Explanation: It is a short extra consequence, not an independent starting point.

17. The converse of a theorem is formed by:

(A) interchanging given and to-prove
(B) negating the conclusion only
(C) erasing the figure
(D) doubling all lengths

Correct Answer: A

Explanation: The converse need not be true even if the original theorem is true.

18. A standard first step in writing a geometric proof is to state the:

(A) corollary
(B) theorem in words (the statement)
(C) volume ratio
(D) exterior angle sum only

Correct Answer: B

Explanation: Then come figure, given, required to prove, construction, and the reasoned proof.

19. Similar figures have:

(A) the same size and different shape
(B) equal areas always
(C) the same shape but not necessarily the same size
(D) no corresponding angles

Correct Answer: C

Explanation: Similarity is about shape; congruence is the special case of the same size as well.

20. The symbol for ‘is similar to’ is:

(A) ≡
(B) □
(C) □

(D) □

Correct Answer: D

Explanation: If figures A and B are similar one writes A □ B.

21. All circles are similar because they:

(A) have the same shape (round) regardless of radius
(B) have equal radii
(C) have equal area
(D) are polygons

Correct Answer: A

Explanation: A circle is determined by radius, but the shape does not change with scale.

22. A rectangle and a non-rectangular parallelogram:

(A) are always similar
(B) need not be similar, because the shapes differ
(C) are always congruent
(D) have equal angles always

Correct Answer: B

Explanation: A rectangle and a non-rectangular parallelogram need not be similar, because the shapes differ.

23. If □ABC □ □DEF, corresponding angles satisfy:

(A) □A = □E only
(B) all angles 90°
(C) □A = □D, □B = □E, □C = □F
(D) □A + □D = 180° only

Correct Answer: C

Explanation: Vertices are named in corresponding order.

24. Corresponding sides of similar triangles are:

(A) equal in length always
(B) perpendicular
(C) parallel always
(D) proportional

Correct Answer: D

Explanation: The scale factor k is the common ratio of matching sides.

25. SAS similarity requires two pairs of proportional sides and:

(A) the included angles congruent
(B) a right angle anywhere
(C) equal perimeters
(D) equal areas

Correct Answer: A

Explanation: The equal angle must sit between the proportional sides.

26. If two pairs of angles of two triangles are equal, the triangles are similar by:

(A) SSS
(B) AA
(C) SAS only
(D) RHS only

Correct Answer: B

Explanation: AA forces the third angles equal as well, so the shapes match.

27. If □ABC □ □DEF with scale factor 2, and DE = 5 cm, then AB equals:

(A) 2.5 cm
(B) 5 cm
(C) 10 cm

(D) 25 cm

Correct Answer: C

Explanation: If □ABC □ □DEF with scale factor 2, and DE = 5 cm, then AB equals 10 cm.

28. If corresponding sides of two similar triangles are in ratio 3 : 5, the ratio of their perimeters is:

(A) 9 : 25
(B) 27 : 125
(C) 6 : 5
(D) 3 : 5

Correct Answer: D

Explanation: Perimeter is a linear quantity, so it scales with k.

29. The ratio of areas of two similar figures is:

(A) k^2
(B) k
(C) k^3
(D) 2k

Correct Answer: A

Explanation: Area involves two length factors, so it scales with the square of the linear scale factor.

30. The ratio of volumes of two similar solids is:

(A) k^2
(B) k^3
(C) k
(D) 3k

Correct Answer: B

Explanation: The ratio of volumes of two similar solids is k^3.

31. If two similar triangles have side ratio 1 : 2, the area ratio is:

(A) 1 : 2
(B) 1 : 8
(C) 1 : 4
(D) 2 : 1

Correct Answer: C

Explanation: If two similar triangles have side ratio 1 : 2, the area ratio is 1 : 4.

32. If two similar solids have length ratio 2 : 3, the volume ratio is:

(A) 4 : 9
(B) 2 : 3
(C) 6 : 9
(D) 8 : 27

Correct Answer: D

Explanation: If two similar solids have length ratio 2 : 3, the volume ratio is 8 : 27.

33. If areas of two similar pentagons are 16 : 25, the side ratio is:

(A) 4 : 5
(B) 16 : 25
(C) 64 : 125
(D) 8 : 10

Correct Answer: A

Explanation: Linear ratio is the square root of the area ratio.

34. Two triangles with the same height have area ratio equal to the ratio of their:

(A) angles
(B) bases
(C) perimeters squared always

(D) volumes

Correct Answer: B

Explanation: Area = (1/2) × base × height, so a common height cancels in the ratio.

35. If a line parallel to one side of a triangle cuts the other two sides, it creates a smaller triangle:

(A) congruent to the original
(B) of equal area
(C) similar to the original
(D) with opposite orientation only

Correct Answer: C

Explanation: Corresponding angles with the parallel line are equal, giving AA similarity.

36. If AD/AB = 5/8 with DE □ BC in □ABC, then area(□ADE) : area(□ABC) is:

(A) 5 : 8
(B) 125 : 512
(C) 8 : 5
(D) 25 : 64

Correct Answer: D

Explanation: The linear ratio is 5/8, so the area ratio is (5/8)² = 25/64.

37. A polygon is a closed plane figure whose sides are:

(A) straight line segments
(B) arcs of circles
(C) always curved
(D) always infinite rays

Correct Answer: A

Explanation: Greek poly + gon means many angles; sides meet at vertices.

38. The least number of sides a polygon can have is:

(A) 2
(B) 3
(C) 4
(D) 5

Correct Answer: B

Explanation: A triangle is the simplest closed polygonal chain.

39. A regular polygon has:

(A) equal sides only
(B) equal angles only
(C) all sides equal and all interior angles equal
(D) at least one right angle

Correct Answer: C

Explanation: It is both equilateral and equiangular.

40. An irregular polygon has:

(A) all sides and angles equal
(B) no vertices
(C) curved sides
(D) at least one side or angle different from the others

Correct Answer: D

Explanation: Failure of regularity in length or angle is enough.

41. A square is a regular polygon; a rectangle that is not a square is:

(A) irregular (angles equal but sides not all equal)
(B) regular
(C) not a polygon

(D) a pentagon

Correct Answer: A

Explanation: A square is a regular polygon; a rectangle that is not a square is irregular (angles equal but sides not all equal).

42. A rhombus that is not a square is:

(A) regular
(B) irregular (sides equal but angles not all equal)
(C) a hexagon
(D) not a quadrilateral

Correct Answer: B

Explanation: Regularity needs equal angles as well as equal sides.

43. A five-sided polygon is a:

(A) hexagon
(B) heptagon
(C) pentagon
(D) octagon

Correct Answer: C

Explanation: A five-sided polygon is a pentagon.

44. A six-sided polygon is a:

(A) pentagon
(B) nonagon
(C) decagon
(D) hexagon

Correct Answer: D

Explanation: A six-sided polygon is a hexagon.

45. An interior angle of a polygon is formed by:

(A) two adjacent sides, inside the shape
(B) a side and the extension of the next side, outside the shape
(C) two diagonals only
(D) a radius and a tangent

Correct Answer: A

Explanation: Interior means inside the closed chain.

46. An exterior angle is formed by a side and:

(A) a diagonal
(B) the extension of an adjacent side
(C) the apothem
(D) a median

Correct Answer: B

Explanation: It sits outside, adjacent to the interior angle at that vertex.

47. An interior angle and the adjacent exterior angle are:

(A) equal
(B) complementary
(C) supplementary (sum 180°)
(D) vertical

Correct Answer: C

Explanation: An interior angle and the adjacent exterior angle are supplementary (sum 180°).

48. The sum of interior angles of an n-gon is:

(A) $n \times 180°$
(B) $(n - 2) \times 360°$

(C) 360°/n
(D) (n − 2) × 180°

Correct Answer: D

Explanation: From one vertex you can draw n − 2 triangles, each contributing 180°.

49. A quadrilateral can be split from one vertex into how many triangles?

(A) 2
(B) 1
(C) 3
(D) 4

Correct Answer: A

Explanation: n − 2 = 2 when n = 4, and 2 × 180° = 360°.

50. Sum of interior angles of a pentagon is:

(A) 360°
(B) 540°
(C) 720°
(D) 180°

Correct Answer: B

Explanation: Sum of interior angles of a pentagon is 540°.

51. Sum of interior angles of a hexagon is:

(A) 540°
(B) 900°
(C) 720°
(D) 1080°

Correct Answer: C

Explanation: Sum of interior angles of a hexagon is 720°.

52. Sum of interior angles of a heptagon is:

(A) 720°
(B) 1080°
(C) 1260°
(D) 900°

Correct Answer: D

Explanation: Sum of interior angles of a heptagon is 900°.

53. Sum of interior angles of a decagon is:

(A) 1800°
(B) 1440°
(C) 1620°
(D) 360°

Correct Answer: A

Explanation: Sum of interior angles of a decagon is 1800°.

54. Each interior angle of a regular octagon is:

(A) 120°
(B) 135°
(C) 140°
(D) 150°

Correct Answer: B

Explanation: Each interior angle of a regular octagon is 135°.

55. Each interior angle of a regular nonagon is:

(A) 135°
(B) 150°

(C) 140°
(D) 160°

Correct Answer: C

Explanation: Each interior angle of a regular nonagon is 140°.

56. The sum of exterior angles of any convex polygon is:

(A) 180°
(B) (n − 2) × 180°
(C) n × 90°
(D) 360°

Correct Answer: D

Explanation: The sum of exterior angles of any convex polygon is 360°.

57. Each exterior angle of a regular n-gon is:

(A) 360° / n
(B) (n − 2) × 180° / n
(C) 180° / n
(D) n × 360°

Correct Answer: A

Explanation: Each exterior angle of a regular n-gon is 360° / n.

58. Each exterior angle of a regular pentagon is:

(A) 108°
(B) 72°
(C) 60°
(D) 90°

Correct Answer: B

Explanation: 360°/5 = 72°, and the interior is 108°.

59. Each exterior angle of a regular hexagon is:

(A) 120°
(B) 90°
(C) 60°
(D) 45°

Correct Answer: C

Explanation: Each exterior angle of a regular hexagon is 60°.

60. If each exterior angle of a regular polygon is 45°, then n equals:

(A) 6
(B) 9
(C) 10
(D) 8

Correct Answer: D

Explanation: If each exterior angle of a regular polygon is 45°, then n equals 8.

61. If each exterior angle of a regular polygon is 24°, then n equals:

(A) 15
(B) 12
(C) 18
(D) 24

Correct Answer: A

Explanation: If each exterior angle of a regular polygon is 24°, then n equals 15.

62. A regular polygon with exterior angle 120° is:

(A) a square
(B) an equilateral triangle

(C) a hexagon
(D) a pentagon

Correct Answer: B

Explanation: A regular polygon with exterior angle 120° is an equilateral triangle.

63. If each interior angle of a regular polygon is five times the exterior, then n equals:

(A) 8
(B) 10
(C) 12
(D) 6

Correct Answer: C

Explanation: If each interior angle of a regular polygon is five times the exterior, then n equals 12.

64. If exterior : interior = 1 : 2 in a regular polygon, then n equals:

(A) 4
(B) 8
(C) 3
(D) 6

Correct Answer: D

Explanation: If exterior : interior = 1 : 2 in a regular polygon, then n equals 6.

65. The polygon whose interior-angle sum equals its exterior-angle sum is a:

(A) quadrilateral
(B) pentagon
(C) hexagon
(D) triangle

Correct Answer: A

Explanation: The polygon whose interior-angle sum equals its exterior-angle sum is a quadrilateral.

66. If the interior-angle sum is four times the exterior-angle sum, n equals:

(A) 8
(B) 10
(C) 6
(D) 12

Correct Answer: B

Explanation: If the interior-angle sum is four times the exterior-angle sum, n equals 10.

67. Number of diagonals of an n-gon is:

(A) $n(n - 1)/2$
(B) $n - 2$
(C) $n(n - 3)/2$
(D) $2n$

Correct Answer: C

Explanation: Each vertex joins to $n - 3$ non-adjacent vertices, and each diagonal is counted twice.

68. A pentagon has how many diagonals?

(A) 3
(B) 10
(C) 7
(D) 5

Correct Answer: D

Explanation: 5 — this correctly answers the question.

69. A hexagon has how many diagonals?

(A) 9
(B) 6

(C) 12
(D) 15

Correct Answer: A

Explanation: 9 — this correctly answers the question.

70. A convex polygon with 14 diagonals has n equal to:

(A) 6
(B) 7
(C) 8
(D) 9

Correct Answer: B

Explanation: A convex polygon with 14 diagonals has n equal to 7.

71. If the interior-angle sum is 2880°, then n equals:

(A) 16
(B) 20
(C) 18
(D) 14

Correct Answer: C

Explanation: If the interior-angle sum is 2880°, then n equals 18.

72. The apothem of a regular polygon is the perpendicular from the centre to a side, and is also:

(A) the circumradius always equal to a side
(B) a diagonal
(C) an exterior angle
(D) the radius of the inscribed circle

Correct Answer: D

Explanation: The apothem of a regular polygon is the perpendicular from the centre to a side, and is also the radius of the inscribed circle.

73. Area of a regular polygon with perimeter P and apothem a is:

(A) (1/2) P a
(B) P a
(C) P / a
(D) n a²

Correct Answer: A

Explanation: Area of a regular polygon with perimeter P and apothem a is (1/2) P a.

74. A regular pentagon of side 8 and apothem 7 has area:

(A) 56
(B) 140
(C) 280
(D) 40

Correct Answer: B

Explanation: A regular pentagon of side 8 and apothem 7 has area 140.

75. A locus is the set of points satisfying a given geometric condition; the plural is:

(A) locuses only in Latin
(B) locations only
(C) loci
(D) locii

Correct Answer: C

Explanation: The word is tied to 'location': every point of the locus obeys the rule, and every point that obeys the rule lies on it.

76. In a plane, the locus of points at a fixed distance r from a point O is:

(A) a line
(B) a sphere
(C) two parallel lines
(D) a circle with centre O and radius r

Correct Answer: D

Explanation: In a plane, the locus of points at a fixed distance r from a point O is a circle with centre O and radius r.

77. The locus of points at a fixed distance from a given straight line is:

(A) two lines parallel to the given line, one on each side
(B) one parallel line
(C) a circle
(D) the perpendicular bisector

Correct Answer: A

Explanation: You can stand the same distance on either side of the line.

78. The locus of points equidistant from two given points A and B is:

(A) the circle through A and B
(B) the perpendicular bisector of AB
(C) the line AB itself
(D) two parallels

Correct Answer: B

Explanation: Every point of that bisector is as far from A as from B.

79. The locus of points equidistant from two intersecting lines is:

(A) a circle
(B) one parallel
(C) the pair of angle bisectors of those lines
(D) the intersection point only

Correct Answer: C

Explanation: Distance to a line is measured perpendicularly, and the angle bisector equalises those distances.

80. The locus of points equidistant from two parallel lines is:

(A) a circle
(B) two circles
(C) their common perpendicular only
(D) the parallel line exactly halfway between them

Correct Answer: D

Explanation: The locus of points equidistant from two parallel lines is the parallel line exactly halfway between them.

B. Less Important / Secondary Topics

81. A seven-sided polygon is a:

(A) heptagon
(B) hexagon
(C) octagon
(D) nonagon

Correct Answer: A

Explanation: Hepta- marks seven sides, so the polygon is a heptagon.

82. A nine-sided polygon is a:

(A) octagon
(B) nonagon
(C) decagon
(D) heptagon

Correct Answer: B

Explanation: Nona- marks nine sides, so the polygon is a nonagon.

83. A ten-sided polygon is a:

(A) nonagon
(B) dodecagon
(C) decagon
(D) hexagon

Correct Answer: C

Explanation: Deca- marks ten sides, so the polygon is a decagon.

84. In three-dimensional space, the locus of points at a fixed distance from a point is a:

(A) circle
(B) plane
(C) line
(D) sphere

Correct Answer: D

Explanation: The plane case was a circle; the space analogue is a sphere.

85. Every point on an angle bisector of two intersecting lines is:

(A) equidistant from the two lines
(B) closer to one line
(C) on both lines
(D) at the intersection only

Correct Answer: A

Explanation: That is the characterisation of the bisector as a locus.

86. The word theorem is linked with Greek theorien, meaning to:

(A) measure an apothem
(B) behold or consider
(C) draw a pentagon
(D) count diagonals

Correct Answer: B

Explanation: The word theorem is linked with Greek theorien, meaning to behold or consider.

87. Reflexive property of equality says that for any number a:

(A) a = 0
(B) a = −a
(C) a = a
(D) a + 1 = a

Correct Answer: C

Explanation: Reflexive property of equality says that for any number a a = a.

88. Transitive property: if a = b and b = c, then:

(A) a + c = b
(B) a = −c
(C) a b = c
(D) a = c

Correct Answer: D

Explanation: The same holds for equal angles: □A = □B and □B = □C imply □A = □C.

89. Symmetric property of equality: if a = b then:

(A) b = a
(B) a = −b
(C) a + b = 0
(D) a b = 1

Correct Answer: A

Explanation: Symmetric property of equality: if a = b then b = a.

90. "All right angles are equal to one another" is used as:

(A) a conjecture needing data
(B) a standard geometric axiom/postulate
(C) a volume formula
(D) a locus

Correct Answer: B

Explanation: It is one of the classical starting facts of Euclidean geometry.

91. "The whole is greater than its part" is:

(A) false for lengths
(B) a similarity test
(C) an axiom about magnitudes
(D) an exterior-angle formula

Correct Answer: C

Explanation: It is listed among the basic comparison axioms.

92. A 15-sided polygon is called a:

(A) dodecagon
(B) nonagon
(C) hexadecagon
(D) pentadecagon

Correct Answer: D

Explanation: A 15-sided polygon is called a pentadecagon.

93. As the number of sides of a regular convex polygon grows, each interior angle approaches:

(A) 180°
(B) 90°
(C) 360°
(D) 0°

Correct Answer: A

Explanation: Each interior angle is 180°(1 − 2/n), which increases toward 180° but stays less than 180°.

94. Maximum exterior angle of a regular convex polygon occurs at n = 3 and equals:

(A) 90°
(B) 120°
(C) 60°
(D) 180°

Correct Answer: B

Explanation: 360°/3 = 120° for an equilateral triangle; larger n makes a smaller exterior angle.

95. A regular polygon cannot have exterior angle 50° because:

(A) 50 > 45
(B) 50 is obtuse
(C) 360/50 is not an integer
(D) interior would be 50°

Correct Answer: C

Explanation: n = 360°/E must be an integer at least 3.

96. If an exterior angle of a regular polygon is 12°, the interior-angle sum is:

(A) 168°
(B) 360°
(C) 1800°
(D) 5040°

Correct Answer: D

Explanation: If an exterior angle of a regular polygon is 12°, the interior-angle sum is 5040°.

97. If similar cylinders have base-area ratio 16 : 25, the height ratio is:

(A) 4 : 5
(B) 16 : 25
(C) 64 : 125
(D) 8 : 10

Correct Answer: A

Explanation: Base area scales with k^2, so $k = 4/5$.

98. Those same cylinders have volume ratio:

(A) 16 : 25
(B) 64 : 125
(C) 4 : 5
(D) 8 : 27

Correct Answer: B

Explanation: Those same cylinders have volume ratio 64 : 125.

99. If one similar cone has 8 times the volume of another, the linear scale factor is:

(A) 8
(B) 4
(C) 2
(D) √8

Correct Answer: C

Explanation: If one similar cone has 8 times the volume of another, the linear scale factor is 2.

100. Masses of two similar objects of the same density scale like volume. Masses 8 kg and 27 kg imply height ratio:

(A) 8 : 27
(B) 4 : 9
(C) √8 : √27
(D) 2 : 3

Correct Answer: D

Explanation: Masses of two similar objects of the same density scale like volume. Masses 8 kg and 27 kg imply height ratio 2 : 3.

101. A map shows 10 m as 5 cm. Linear scale is 5 cm : 10 m = 1 : 200. Areas then scale as:

(A) 1 : 40 000
(B) 1 : 200
(C) 1 : 8 000 000
(D) 1 : 100

Correct Answer: A

Explanation: Area scale is the square of the linear scale.

102. If AB = 21 cm and P divides AB in the ratio 3 : 4, then AP equals:

(A) 12 cm
(B) 9 cm
(C) 7 cm
(D) 15 cm

Correct Answer: B

Explanation: If AB = 21 cm and P divides AB in the ratio 3 : 4, then AP equals 9 cm.

103. Which of the following is a polygon?

(A) circle
(B) sphere
(C) quadrilateral

(D) cylinder

Correct Answer: C

Explanation: A quadrilateral is a 4-sided polygonal chain; a circle is not made of line segments.

104. Which of the following is a regular polygon?

(A) rhombus (non-square)
(B) rectangle (non-square)
(C) kite
(D) square

Correct Answer: D

Explanation: Square — this correctly answers the question.

105. Sum of interior angles of a 12-gon is:

(A) 1800°
(B) 2160°
(C) 1980°
(D) 360°

Correct Answer: A

Explanation: Sum of interior angles of a 12-gon is 1800°.

106. Sum of interior angles of an irregular hexagon is still:

(A) 120° each
(B) 720°
(C) 360°
(D) 540°

Correct Answer: B

Explanation: Sum of interior angles of an irregular hexagon is still 720°.

107. A pyramid and a cube:

(A) are similar solids always
(B) always have volume ratio 1 : 8
(C) are not similar in general, because the shapes differ
(D) have the same number of faces

Correct Answer: C

Explanation: A pyramid and a cube are not similar in general, because the shapes differ.

108. Construction in a proof means:

(A) erasing the given figure
(B) changing the hypothesis
(C) measuring with a protractor as the reason
(D) adding extra lines or points that help the argument

Correct Answer: D

Explanation: The extra drawing is justified, then used with axioms and earlier theorems.