

Geometry Practice Worksheet

Fifty questions spanning angle relationships, proofs, congruent triangles, similarity, right triangles, coordinate geometry, circles, area, surface area, and volume. Questions 45 to 50 ask for written reasoning.

QUESTIONS	50	MULTIPLE CHOICE	12	WRITTEN	38
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Instructions

Mark diagrams when needed, show theorem choices, and write units for measurement answers. Use π in exact form unless a decimal is requested.

- 1** A linear pair contains one angle of 63 degrees. Find the other angle.

- 2** Two vertical angles are formed. One is 48 degrees. Find the other.

- 3** A triangle has angles 35 degrees and 67 degrees. Find the third angle.

- 4** An exterior angle of a triangle is 126 degrees. One remote interior angle is 54 degrees. Find the other remote interior angle.

- 5** If parallel lines are cut by a transversal, corresponding angles are:

A) supplementary
B) congruent
C) always 90 degrees
D) unrelated

- 6** Which theorem proves triangle congruence from two sides and the included angle?

A) SSS
B) SAS
C) ASA
D) AAS

- 7** Which congruence theorem applies only to right triangles?

A) HL
B) SSS
C) AAS
D) CPCTC

- 8** CPCTC can be used:

A) before proving triangles congruent
B) after proving triangles congruent
C) only for circles
D) only for right triangles

- 9** Given $AB = DE$, $BC = EF$, and $AC = DF$. Which triangle congruence theorem applies?

- 10** Given angle $A = \text{angle } D$, $AB = DE$, and angle $B = \text{angle } E$. Which triangle congruence theorem applies?

- 11** A right triangle has legs 6 and 8. Find the hypotenuse.

- 12** A right triangle has hypotenuse 13 and one leg 5. Find the other leg.

- 13** In a 45-45-90 triangle, each leg is 7. Find the hypotenuse.

- 14** In a 30-60-90 triangle, the short leg is 5. Find the hypotenuse.

- 15** In a 30-60-90 triangle, the short leg is 4. Find the long leg.

- 16** Two triangles are similar by AA if they have:

A) three equal sides
B) two matching angles
C) one matching side
D) equal areas

- 17** Two similar triangles have side lengths 4 and 10 in matching positions. Find the scale factor from the first to the second.

- 18** A 6-foot object casts a 9-foot shadow. A nearby tree casts a 30-foot shadow. Find the tree height.

- 19** Find the slope between (2, 3) and (6, 11).

- 20** Find the midpoint of (2, -4) and (8, 6).

- 21** Find the distance between (0, 0) and (3, 4).

- 22** Lines with slopes 2 and 2 are:

A) parallel
B) perpendicular
C) neither
D) the same point

23 Lines with slopes 3 and $-1/3$ are:

- A) parallel
- B) perpendicular
- C) neither
- D) vertical

24 Find the interior angle sum of a pentagon.

25 Find each interior angle of a regular hexagon.

26 A parallelogram always has:

- A) four right angles
- B) opposite sides parallel
- C) all sides congruent
- D) exactly one pair of parallel sides

27 A rectangle always has:

- A) four right angles
- B) all sides congruent
- C) no parallel sides
- D) only one diagonal

28 Find the circumference of a circle with radius 7, using $\pi = 22/7$.

29 Find the area of a circle with radius 5, in terms of π .

30 A circle has diameter 18. Find its radius.

31 An inscribed angle intercepts an arc of 86 degrees. Find the angle measure.

32 A central angle is 120 degrees in a circle of radius 6. Find the sector area in terms of π .

33 A tangent touches a circle at point T. The radius to T forms what angle with the tangent?

34 A chord is:

- A) a line segment with endpoints on the circle
- B) a line touching the circle once
- C) the distance around a circle
- D) the center point

35 Find the area of a triangle with base 14 and height 9.

36 Find the area of a parallelogram with base 12 and height 7.

37 Find the area of a trapezoid with bases 8 and 14 and height 5.

- 38** Find the perimeter of a rectangle with length 11 and width 6.

- 39** Find the volume of a rectangular prism with length 5, width 4, and height 9.

- 40** Find the volume of a cylinder with radius 3 and height 10, in terms of π .

- 41** Find the volume of a cone with radius 6 and height 9, in terms of π .

- 42** Area is measured in:

A) linear units
B) square units
C) cubic units
D) degrees

- 43** Volume is measured in:

A) linear units
B) square units
C) cubic units
D) degrees

- 44** A square has area 81. Find its side length.

- 45** Write the first proof step after a given statement 'AB = CD'.

- 46** Explain why a diagram alone cannot prove two angles are congruent.

- 47** In a proof, explain when CPCTC is allowed.

- 48** A student uses SAS but the known angle is not between the two known sides. Explain the issue.

- 49** A student finds area of a circle using $2\pi \times r$. Explain and correct the mistake.

- 50** A coordinate proof needs to show opposite sides are parallel. What should the student calculate?

Answer key

Direct answers only, in question order. Work the set first, then check.

1. 117	2. 48	3. 78	4. 72	5. B) congruent
6. B) SAS	7. A) HL	8. B) after proving triangles congruent	9. SSS	10. ASA
11. 10	12. 12	13. $7\sqrt{2}$	14. 10	15. $4\sqrt{3}$
16. B) two matching angles	17. 5/2	18. 20	19. 2	20. (5, 1)
21. 5	22. A) parallel	23. B) perpendicular	24. 540	25. 120
26. B) opposite sides parallel	27. A) four right angles	28. 44	29. 25π	30. 9
31. 43	32. 12π	33. 90 degrees	34. A) a line segment with endpoints on the circle	35. 63
36. 84	37. 55	38. 34	39. 180	40. 90π
41. 108π	42. B) square units	43. C) cubic units	44. 9	45. Use the given statement as the first statement, with reason: Given.
46. A diagram can suggest a relationship, but congruence must be justified by givens, definitions, postulates, or theorems.	47. CPCTC is allowed only after the triangles have already been proven congruent.	48. SAS requires the included angle between the two known sides; otherwise the evidence does not match SAS.	49. $2\pi r$ is circumference. Area is πr^2 .	50. Calculate slopes of opposite sides and show matching slopes for parallel lines.

Error log

Bring this page to your next session so the tutor can start from what actually blocked you.

Questions I answered incorrectly:

Was it the diagram, theorem choice, algebra, formula, or explanation?

The single Geometry topic I want to start the next session with:
