KIDSLEARN MATH · PRACTICE ASSIGNMENT

Geometry Practice

Name: Date: Score: / 50

Give each answer with its unit. Leave answers "in terms of π" as a multiple of π; when told to use π ≈ 3.14, give the decimal. Figures are not drawn to scale unless the question says so. Answers are at the end.

Part A — Warm-up

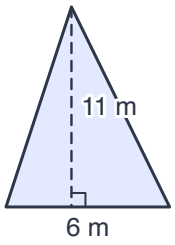
1. A square tile has sides of 12 in. What is its area?

2. A rectangular swimming pool is 11 cm long and 10 cm wide. What is its perimeter?

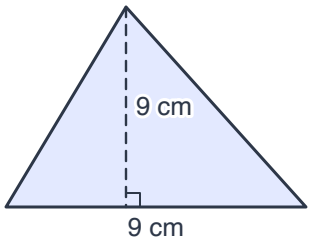
3. A rectangular garden bed is 6 mm long and 7 mm wide. What is its perimeter?

4. A rectangular field is 9 m long and 7 m wide. What is its area?

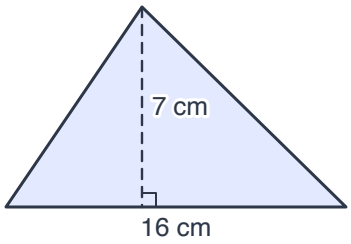
5. Find the area of the triangle.



6. Find the area of the triangle.



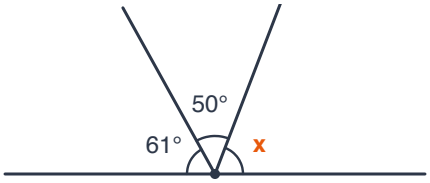
7. Find the area of the triangle.



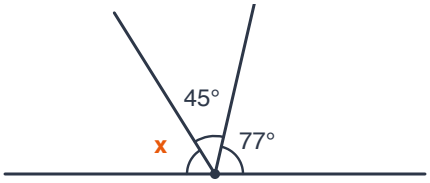
8. The angles lie on a straight line. Find x.



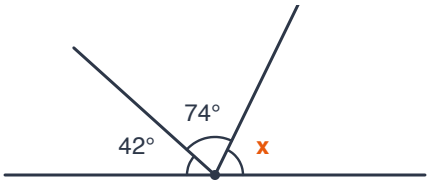
9. Three angles lie on a straight line. Find x.



10. Three angles lie on a straight line. Find x.



11. Three angles lie on a straight line. Find x.



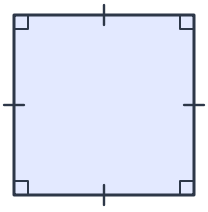
12. How many sides does a quadrilateral have?

13. Which shape has exactly one pair of parallel sides?

(A) Parallelogram (B) Trapezoid

(C) Rectangle (D) Rhombus

14. What is the name of this shape?



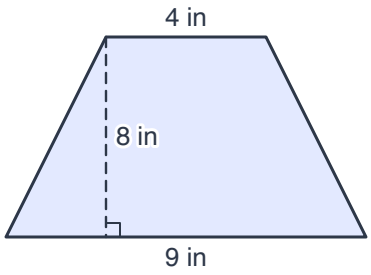
(A) Square (B) Trapezoid

(C) Parallelogram (D) Rhombus

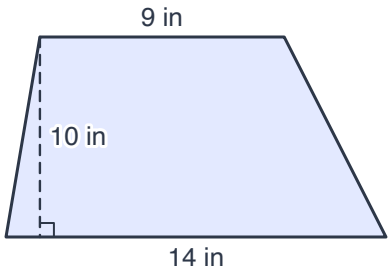
15. How many corners (vertices) do 3 heptagons have altogether?

Part B — Core practice

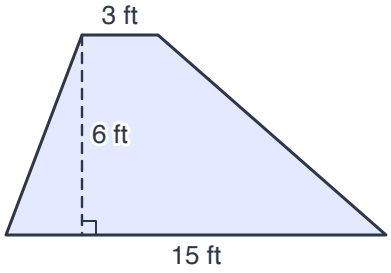
16. The top and bottom sides are parallel. Find the area of the trapezoid.



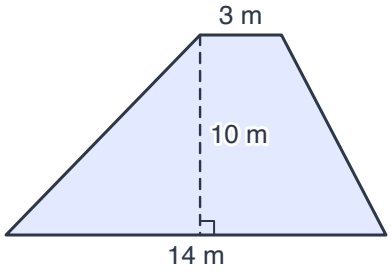
17. The top and bottom sides are parallel. Find the area of the trapezoid.



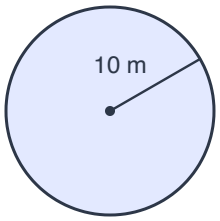
18. The top and bottom sides are parallel. Find the area of the trapezoid.



19. The top and bottom sides are parallel. Find the area of the trapezoid.

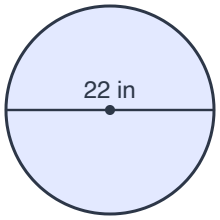


20. The circle has a radius of 10 m. Find its area. Give your answer in terms of π.



21. A circular pond has a diameter of 16 cm. Find its circumference. Give your answer in terms of π.

22. The circle has a diameter of 22 in. Find its area. Give your answer in terms of π.



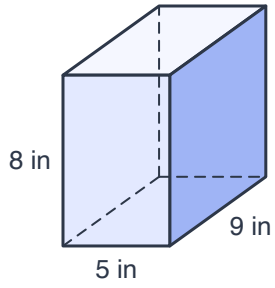
23. The circle has a radius of 11 mm. Find its area. Use $\pi \approx 3.14$.



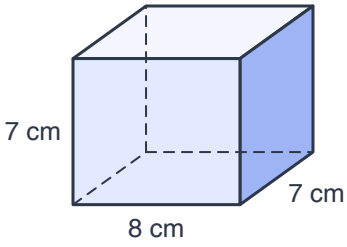
24. A shoe box is a rectangular prism 12 cm long, 6 cm wide and 2 cm high. Find its volume.

25. A storage chest is a rectangular prism 12 ft long, 2 ft wide and 8 ft high. Find its volume.

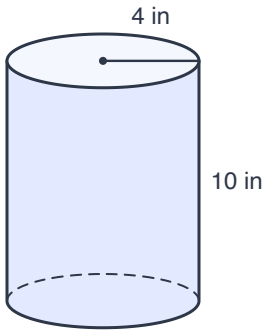
26. Find the total surface area of the rectangular prism.



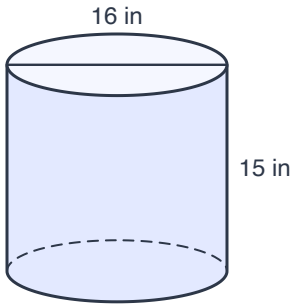
27. Find the volume of the rectangular prism.



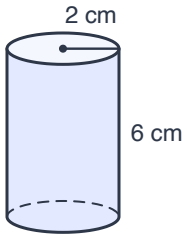
28. Find the volume of the cylinder. Use $\pi \approx 3.14$.



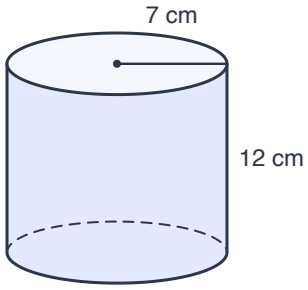
29. Find the volume of the cylinder. Give your answer in terms of π.



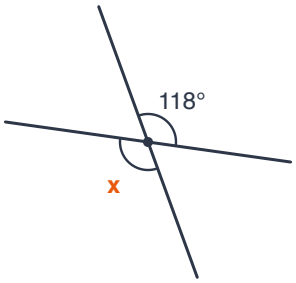
30. Find the volume of the cylinder. Give your answer in terms of π.



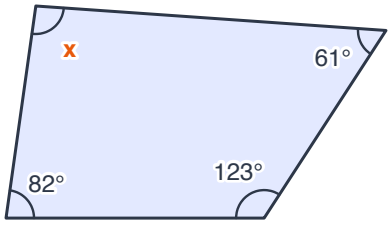
31. Find the volume of the cylinder. Use $\pi \approx 3.14$.



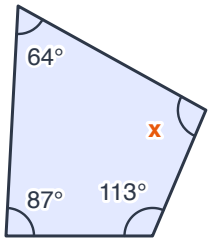
32. Two straight lines cross. Find x.



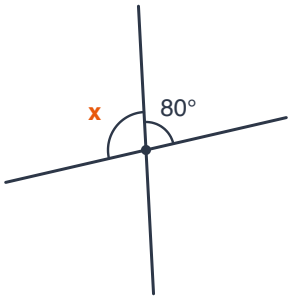
33. Find the missing angle x in the quadrilateral.



34. Find the missing angle x in the quadrilateral.



35. Two straight lines cross. Find x.



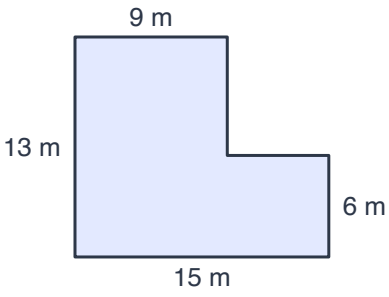
36. A rectangle has a perimeter of 44 cm and a length of 20 cm. What is its width?

37. A rectangle has a perimeter of 36 ft and a length of 10 ft. What is its width?

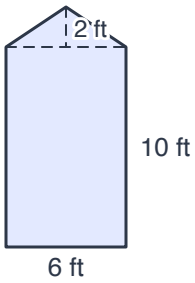
38. A regular octagon has a perimeter of 48 m. How long is each side?

Part C — Challenge

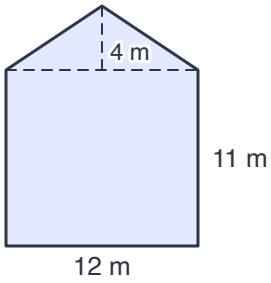
39. All corners are right angles. Find the perimeter of the shape.



40. The shape is a rectangle with a triangle on top. Find its total area.



41. The shape is a rectangle with a triangle on top. Find its total area.

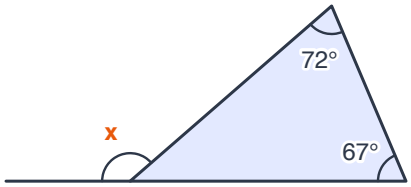


42. A circle has an area of 36π in^2. What is its diameter?

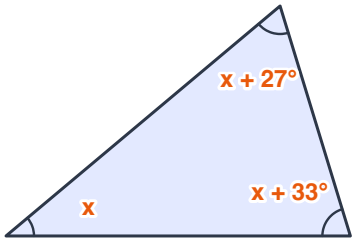
43. A circle has a circumference of 6π cm. What is its radius?

44. A circle has an area of 169π m^2. What is its diameter?

45. One side of the triangle is extended. Find the exterior angle x.



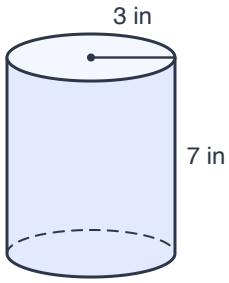
46. The angles of a triangle are x, $x + 33°$ and $x + 27°$. Find x.



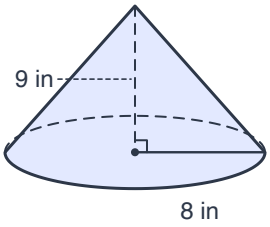
47. The triangle is isosceles (the marked sides are equal). Find x.



48. Find the total surface area of the closed cylinder. Give your answer in terms of π.



49. Find the volume of the cone. Give your answer in terms of π.



50. Find the surface area of a sphere with radius 2 cm. Give your answer in terms of π.

Answer Key — Geometry Practice

1. 144 **in²**
   Area $= s^2 = 12^2 = 144$ in².
2. 42 **cm**
   Perimeter $= 2(l + w) = 2(11 + 10) = 42$ cm.
3. 26 **mm**
   Perimeter $= 2(l + w) = 2(6 + 7) = 26$ mm.
4. 63 **m²**
   Area $= l \times w = 9 \times 7 = 63$ m².
5. 33 **m²**
   Area $= \frac{1}{2} \times b \times h = \frac{1}{2} \times 6 \times 11 = 33$ m².
6. 40.5 **cm²**
   Area $= \frac{1}{2} \times b \times h = \frac{1}{2} \times 9 \times 9 = 40.5$ cm².
7. 56 **cm²**
   Area $= \frac{1}{2} \times b \times h = \frac{1}{2} \times 16 \times 7 = 56$ cm².
8. $42°$
   Angles on a straight line add to 180°: $x = 180 - 138 = 42°$.
9. $69°$
   They add to 180°: $x = 180 - 50 - 61 = 69°$.
10. $58°$
    They add to 180°: $x = 180 - 45 - 77 = 58°$.
11. $64°$
    They add to 180°: $x = 180 - 74 - 42 = 64°$.
12. 4
    A quadrilateral has 4 sides and 4 corners.
13. **(B) Trapezoid**
    A trapezoid has exactly one pair of parallel sides.
14. **(A) Square**
    It is a square. Four equal sides and four right angles.
15. 21
    A heptagon has 7 corners (vertices), so 3 of them have $3 \times 7 = 21$.
16. 52 **in²**
    Area $= \frac{1}{2}(b_1 + b_2)h = \frac{1}{2}(9 + 4) \times 8 = 52$ in².
17. 115 **in²**
    Area $= \frac{1}{2}(b_1 + b_2)h = \frac{1}{2}(14 + 9) \times 10 = 115$ in².
18. 54 **ft²**
    Area $= \frac{1}{2}(b_1 + b_2)h = \frac{1}{2}(15 + 3) \times 6 = 54$ ft².
19. 85 **m²**
    Area $= \frac{1}{2}(b_1 + b_2)h = \frac{1}{2}(14 + 3) \times 10 = 85$ m².
20. 100π **m²**
    $A = \pi r^2 = \pi \times 10^2 = 100\pi$ m².
21. 16π **cm**
    $C = 2\pi r = \pi d = \pi \times 16 = 16\pi$ cm.
22. 121π **in²**
    The radius is $22 \div 2 = 11$. $A = \pi r^2 = \pi \times 11^2 = 121\pi$ in².
23. 379.94 **mm²**
    $A = \pi r^2 \approx 3.14 \times 121 = 379.94$ mm².
24. 144 **cm³**
    $V = l \times w \times h = 12 \times 6 \times 2 = 144$ cm³.
25. 192 **ft³**
    $V = l \times w \times h = 12 \times 2 \times 8 = 192$ ft³.
26. 314 **in²**
    $2(lw + lh + wh) = 2(45 + 40 + 72) = 314$ in².
27. 392 **cm³**
    $V = l \times w \times h = 8 \times 7 \times 7 = 392$ cm³.
28. 502.4 **in³**
    $V = \pi r^2 h \approx 3.14 \times 16 \times 10 = 502.4$ in³.
29. 960π **in³**
    The radius is $16 \div 2 = 8$. $V = \pi r^2 h = \pi \times 64 \times 15 = 960\pi$ in³.
30. 24π **cm³**
    $V = \pi r^2 h = \pi \times 4 \times 6 = 24\pi$ cm³.
31. 1846.32 **cm³**
    $V = \pi r^2 h \approx 3.14 \times 49 \times 12 = 1846.32$ cm³.
32. $118°$
    x and 118° are vertically opposite, so they are equal: $x = 118°$.
33. $94°$
    Angles in a quadrilateral add to 360°: $x = 360 - 82 - 123 - 61 = 94°$.
34. $96°$
    Angles in a quadrilateral add to 360°: $x = 360 - 87 - 113 - 64 = 96°$.

35. 100°

x and 80° lie on a straight line: $x = 180 - 80 = 100^\circ$.

36. 2 **cm**

Length + width $= 44 \div 2 = 22$, so the width is $22 - 20 = 2$ cm.

37. 8 **ft**

Length + width $= 36 \div 2 = 18$, so the width is $18 - 10 = 8$ ft.

38. 6 **m**

It has 8 equal sides: $48 \div 8 = 6$ m.

39. 56 **m**

The two missing sides are 6 and 7 m. Perimeter $= 15 + 6 + 6 + 7 + 9 + 13 = 56$ m (the same as a 15 by 13 rectangle).

40. 66 **ft²**

Rectangle $6 \times 10 = 60$; triangle $\frac{1}{2} \times 6 \times 2 = 6$. Total 66 ft².

41. 156 **m²**

Rectangle $12 \times 11 = 132$; triangle $\frac{1}{2} \times 12 \times 4 = 24$. Total 156 m².

42. 12 **in**

$\pi r^2 = 36\pi$, so $r = 6$ and the diameter is $2r = 12$ in.

43. 3 **cm**

$2\pi r = 6\pi$, so $r = 6 \div 2 = 3$ cm.

44. 26 **m**

$\pi r^2 = 169\pi$, so $r = 13$ and the diameter is $2r = 26$ m.

45. 139°

The inside angle next to x is $180 - 67 - 72 = 41^\circ$, so $x = 180 - 41 = 139^\circ$. (An exterior angle equals the sum of the two opposite inside angles.)

46. 40°

$3x + 60 = 180$, so $3x = 120$ and $x = 40^\circ$.

47. 140°

Both base angles are 20°: $x = 180 - 2 \times 20 = 140^\circ$.

48. 60π **in²**

Two circles $2\pi r^2 = 18\pi$ plus the curved side $2\pi r h = 42\pi$: total 60π in².

49. 192π **in³**

$V = \frac{1}{3}\pi r^2 h = \frac{1}{3}\pi \times 64 \times 9 = 192\pi$ in³.

50. 16π **cm²**

$A = 4\pi r^2 = 4\pi \times 4 = 16\pi$ cm².