Geometry CP

ISLO Exam Review ~ Part 2

Name:_____ Date:_____

Teacher:_____Period:_____

School Policy mandates a penalty for cheating on an exam to be a grade of ZERO "0" for that exam. The term cheating includes "intent to cheat." NO CELL PHONES. All cell phones must be kept out of sight. If a cell phone is seen during an exam, you will receive a grade of ZERO.

All calculators may be checked for inclusion of extraneous material. No papers should be placed in calculators, nor should any information be written on the front/back of calculators. The program portion of the graphing calculator will be checked. Any information entered there can be considered intent of cheating. All calculators will have their memory cleared prior to starting the exam.

Your final examination will consist of approximately 60 multiple choice questions. These will be completed on Scantron. You may write in the test booklet.

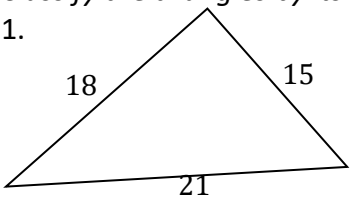
The following pages provide a comprehensive review of materials to be studied for this exam. However, this is only a guide and you should look back over all notes, test, quizzes and worksheets for a complete review. **Problems on the exam may be more difficult than the ones on the review**. We will take a few days in class to review this packet and any other questions you may have. Please feel free to stop in on your own time for further assistance.

Chapter 7: Right Triangles

Vocabulary/ Concepts to Review: Leg, Hypotenuse, Pythagorean Theorem, Adjacent, Opposite, Sine Ratio, Cosine Ratio, Tangent Ratio, Special Right Triangles.

Classify the triangles by its angles.

1.



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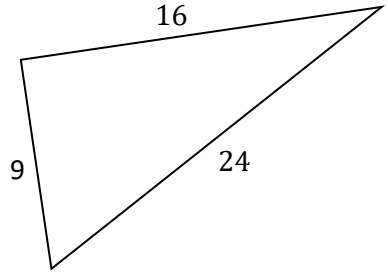
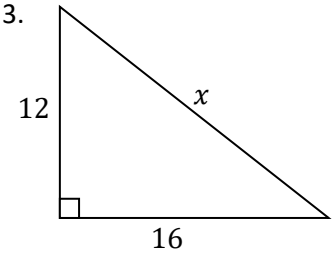


Solve for the missing side lengths. Use special right triangles when possible. Simplify radicals when possible. If necessary, round to 2 decimal places.

3.



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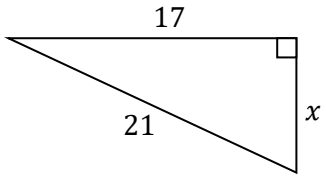

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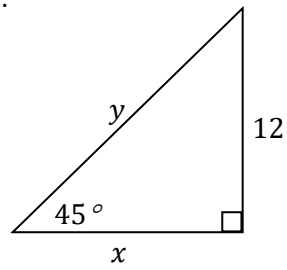

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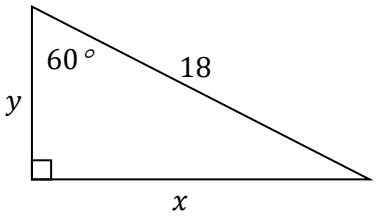

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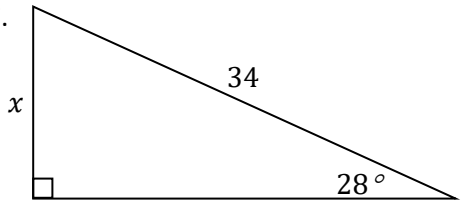

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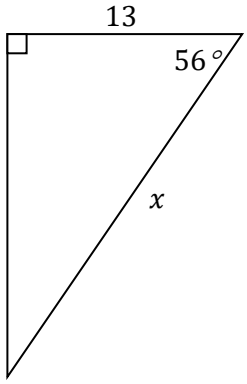

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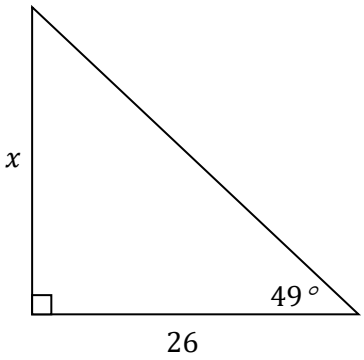

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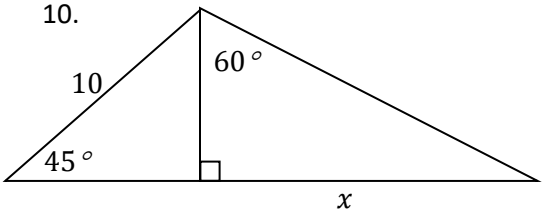

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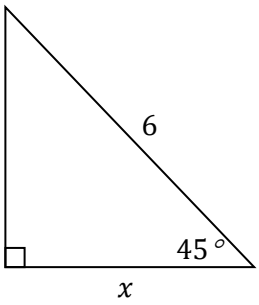
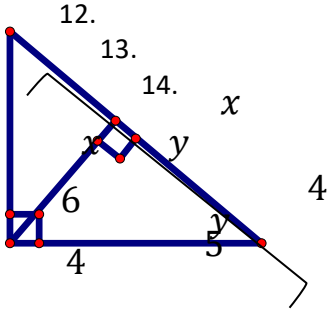


Solve for the variables. Simplify all radicals.

12.



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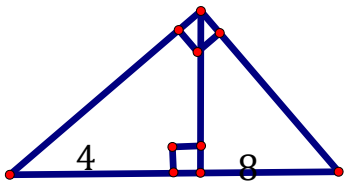

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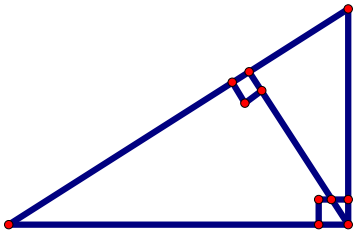
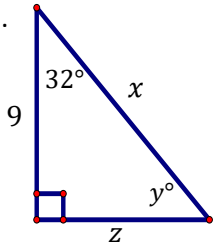


y x

Solve the right triangle. Round all side lengths to 2 decimal places and all angle measures to the nearest whole degree.

15.



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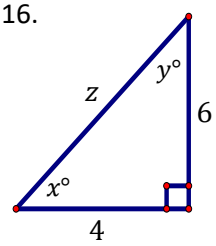

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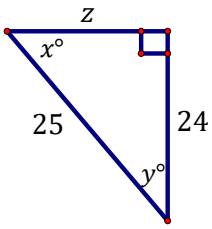

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18. An airplane door is 19 feet off the ground and the ramp has a 30˚ angle of elevation. What is the length of the ramp?	19. The angle of depression from a lifeguard to a swimmer is 35˚. Find the distance from the swimmer to the base of the 12 foot tall lifeguard chair. Round to the nearest hundredth.
20. Find the length of an altitude of an equilateral triangle whose perimeter is 63cm.	21. Find the length of a diagonal of a square whose area is $144ft^2$. Simplify the radical.

22. Find the length of the hypotenuse of an isosceles right triangle whose leg is $8\sqrt{5}$ mm. Express in simplest form.	23. Express each in simplest form. a) $\sqrt{48}$ b) $\frac{5}{\sqrt{10}}$ c) $6\sqrt{50}$

Chapter 8: Quadrilaterals

Vocabulary/Concepts to Review: Parallelogram, Rectangle, Rhombus, Square, Trapezoid, Isosceles Trapezoid, Midsegment/Median of a Trapezoid, Kite **(Be sure to review all properties of every shape.)**

Find each length or angle measure. Round to 2 decimal places where appropriate.

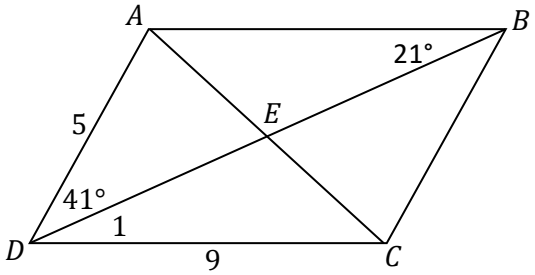
24. $ABCD$ is a **parallelogram**. AC = 8, DE = 6.

$m\angle 1$ = _____ $m\angle ABC$ = _____

$m\angle DAB$ = _____ BC = _____

AB = _____ AE = _____

DB = _____



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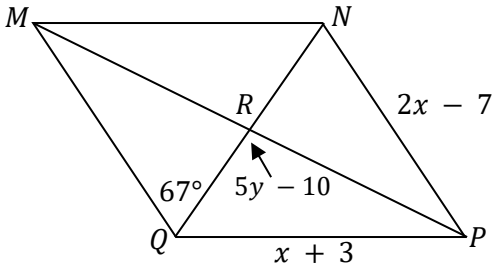
25. MNPQ is a **rhombus**. NR = 5, MP = 24.

x = _____ QP = _____

RP = _____ m$\angle NQP$ = _____

$m\angle MNP$ = _____ m$\angle NMQ$ = _____

$m\angle NRP$ = _____ y = _____



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26. GHKL is a **rectangle**. GN = 17.

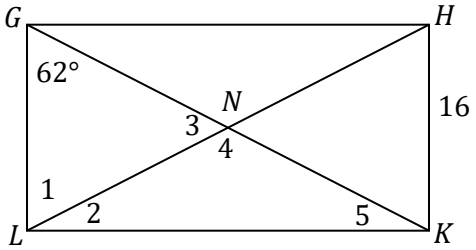
$m\angle HGL$ = _____ $m\angle 1$ = _____

$m\angle 2$ = _____ $m\angle 3$ = _____

$m\angle 4$ = _____ $m\angle 5$ = _____

GK = _____ HL = _____

GL = _____ LK = _____



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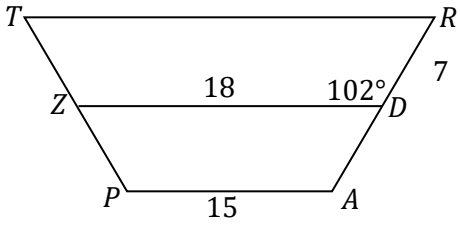
27. TRAP is an isosceles **trapezoid**. $\overline{ZD}$ is a midsegment (median).

DA = _____ TP = _____

TR = _____ m$\angle T$ = _____

$m\angle R$ = _____ m$\angle P$ = _____

$m\angle TZD$ = _____ m$\angle ADZ$ = _____

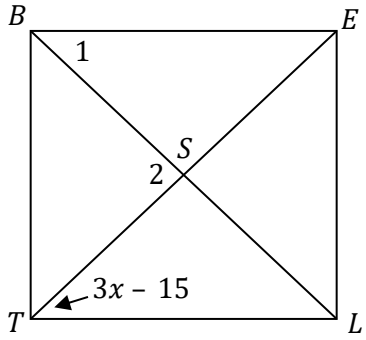


28. BELT is a **square**. The perimeter of BELT is 48 cm.

BE = _____ $m\angle 1$ = _____

$m\angle 2$ = _____ BL = _____

ES = _____ x = _____



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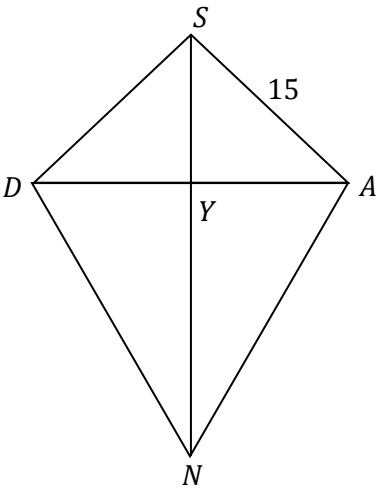
29. SAND is a **kite**. AD = 18 and YN = 21.

DY = _____ SY =_____

AN = _____ SD = _____

DN = _____ $m\angle AYN$ = _____

$m\angle ASD$ = _____ $m\angle NAS$ =_____



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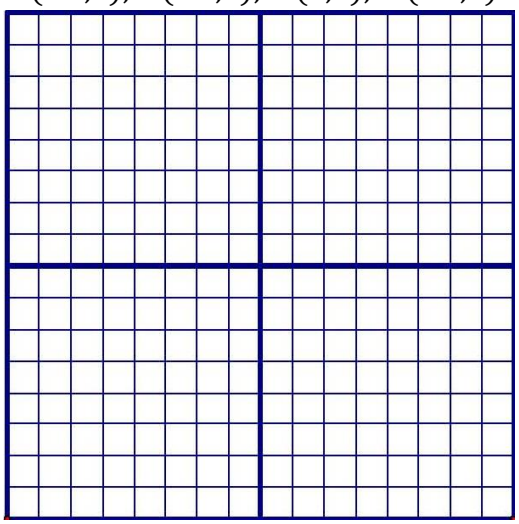
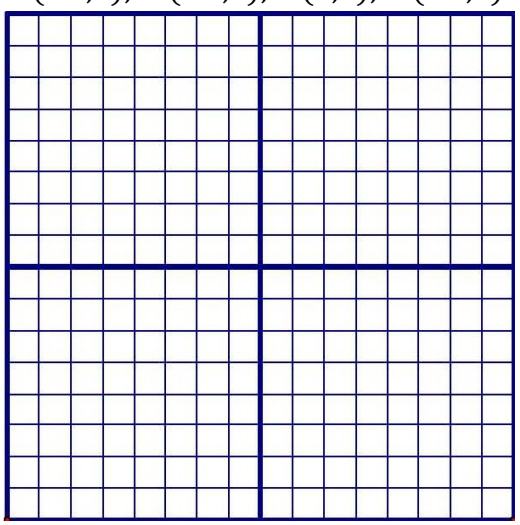
*Give the **most specific** name for each quadrilateral. JUSTIFY your answer and show all of your work.*

30. $F(-6,4);\ L(-1,4);\ A(1,8);\ G(-4,8)$



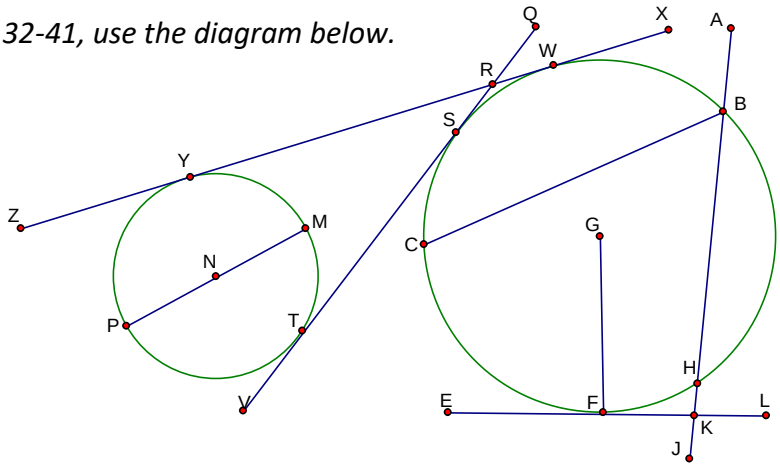
31. $H(-3,4);\ D(-1,2);\ T(3,3);\ V(-2,8)$



Chapter 10: Circles

Vocabulary/Concepts to Review: Circle, Diameter, Radius, Chord, Secant, Tangent, Central Angle, Minor Arc, Major Arc, Semicircle, Inscribed Angle, Intercepted Arc, Angles of a Circle Formulas, Segment Lengths of a Circle Formulas

For questions 32-41, use the diagram below.



32. Name a circle._____

33. Name a radius that is not part of a diameter._____

34. Name a diameter._____

35. Name a chord that is not part of a secant._____

36. Name a secant._____

37. Name a common internal tangent._____

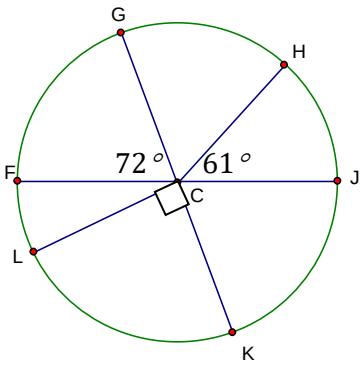
38. Name a right angle._____

39. Name a common external tangent. _____

40. Are these tangent circles?_____

41. Are these concentric circles?_____

For questions 42 – 49, use ⊙C to find the indicated arc.



42. Find $m\widehat{FG}$. _____

43. Find $m\widehat{LK}$. _____

44. Find $m\widehat{LF}$. _____

45. Find $m\widehat{LKH}$. _____

46. Find $m\widehat{GFK}$. _____

47. Find $m\widehat{FGK}$. _____

48. Find $m\widehat{LKF}$. _____

49. Find $m\widehat{KJ}$. _____

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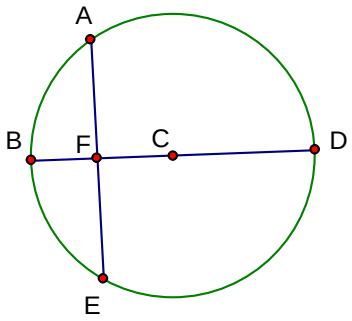
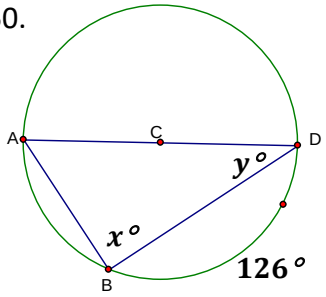
a) If $\overline{BD} \perp \overline{AE}$, name all the congruent arcs and segments.

b) If $FC = 3$ and a radius of the circle is 5, find AF & AE.



For questions 51 – 58, solve for the variable(s). When C is shown, it is the center of the circle.

50.



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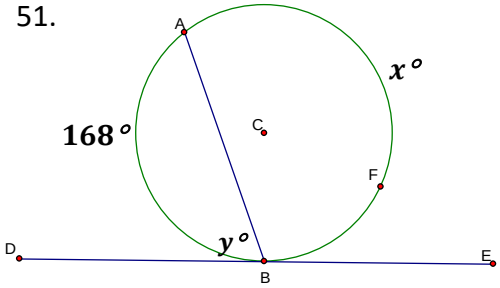

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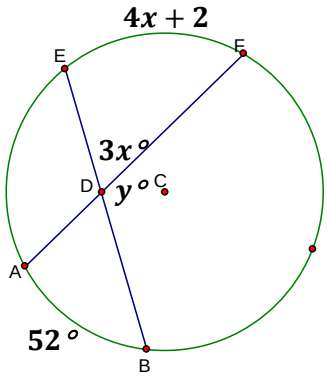

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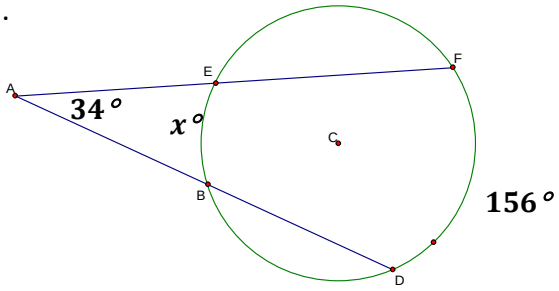

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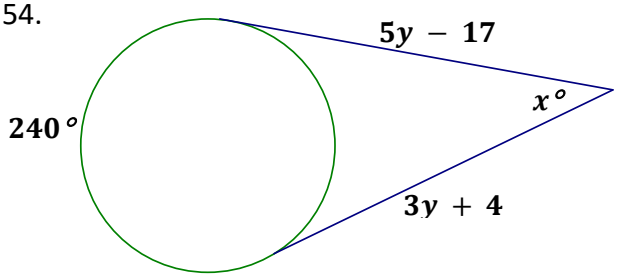

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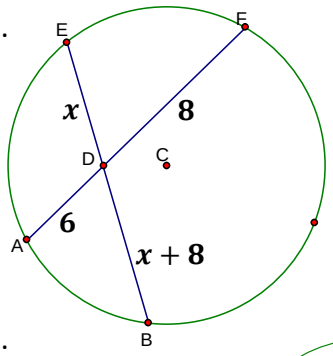

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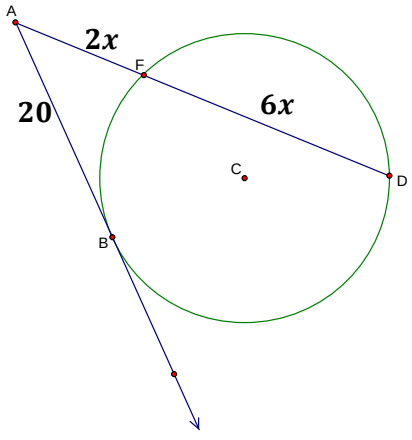

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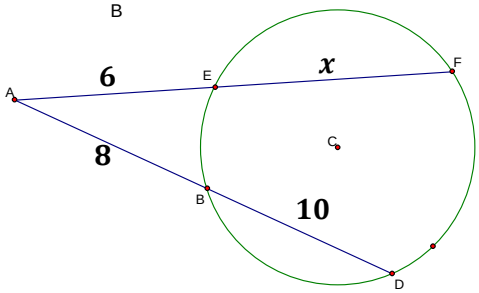
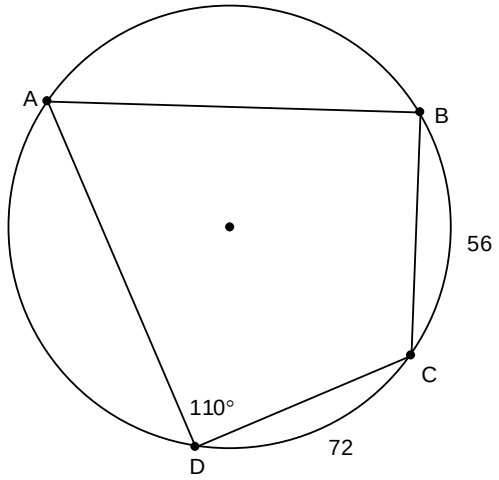


58. Find the measures of angles A, B, and C.

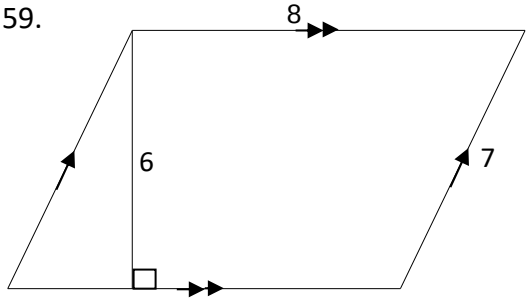


Chapter 11: Perimeter & Area of Polygons & Circles

Vocabulary/Concepts to Review: base, height, altitude, circumference, formulas for perimeter & area.

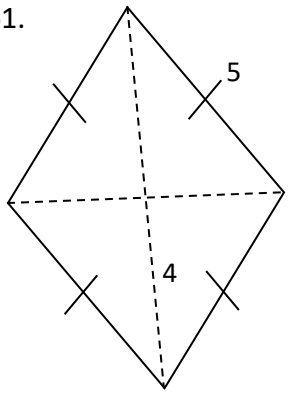
For questions 60 – 63, find the perimeter and area of each shape.

59.



60.

61.



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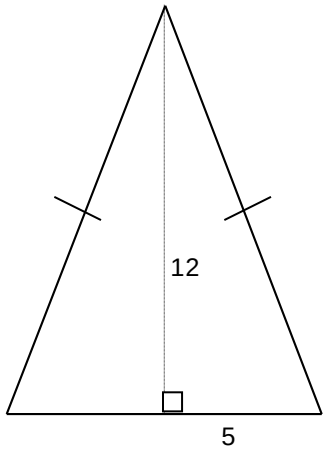
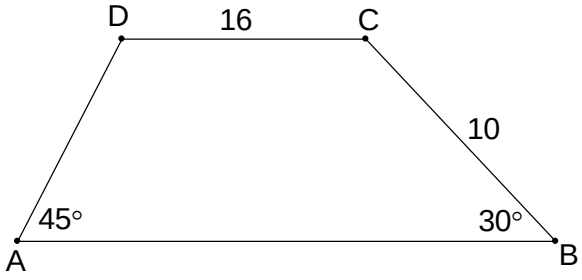
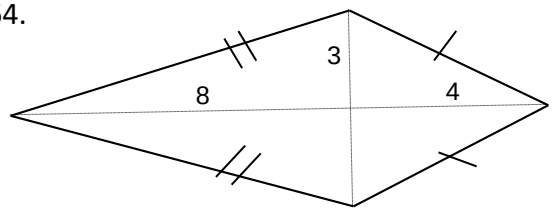


63. ABCD is a trapezoid



64.



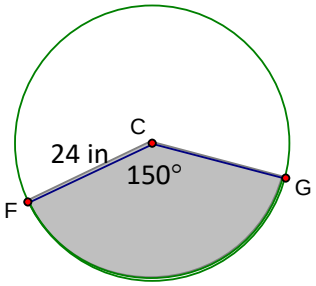
65. Find the area of an equilateral triangle whose perimeter is 60cm.

66. Find the area of a square whose diagonal is 24 in.

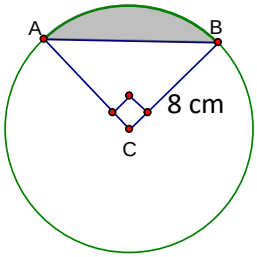
67. Find the circumference and area of a circle with a diameter of 16cm. Express your answers in terms of π and as a decimal rounded to 2 decimal places.

68. Find the area of a rectangle that has a side 24 and a diagonal 51.

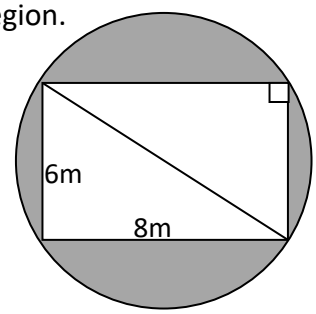
69. Find the arc length and area of the shaded sector.



70. Find the area of the shaded segment.



71. Find the area of the shaded region.

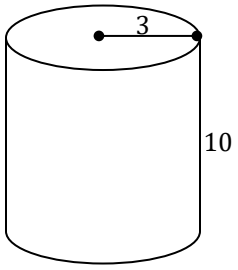


Chapter 12: 3-Dimensional Objects

Vocabulary/Concepts to Review: face, base, vertex, prism, pyramid, cone, cylinder, sphere, height, slant height, surface area, volume, formulas for area and volume

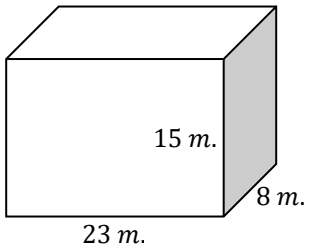
Find the Surface Area and Volume of each of the following figures:

72.



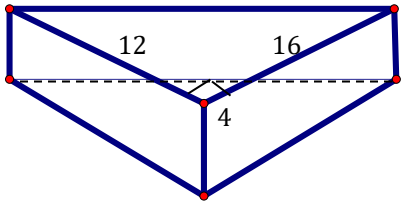
S.A. =_____
V = _____

73.



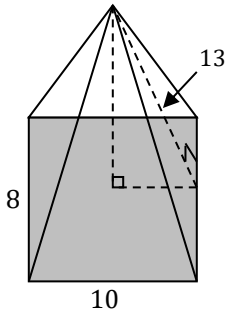
S.A. =_____
V = _____

74.



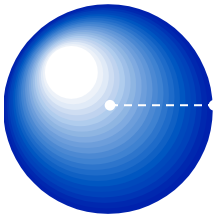
S.A. =_____
V = _____

75.



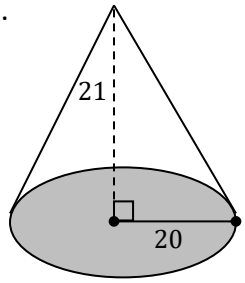
S.A. =_____
V = _____

76. radius = 7 in



S.A. =_____
V = _____

77.



S.A. =_____
V = _____

GEOMETRY CP
ISLO EXAM REVIEW - PART 2
ANSWER KEY

1) Acute
2) Obtuse
3) x = 20
4) $2\sqrt{38}$
5) x = 12, $y = 12\sqrt{2}$
6) $x = 9\sqrt{3}$, y = 9
7) x = 15.96
8) x = 23.25
9) x = 29.91
10) $x = 5\sqrt{6}$
11) $x = 3\sqrt{2}$
12) x = 3.2, y = 8.2
13) $x = 4\sqrt{6}$, $y = 4\sqrt{2}$
14) x = 2, $y = 2\sqrt{3}$
15) x = 10.61, y = 58, z = 5.62
16) x = 56, y = 34, z = 7.21
17) x = 74, y = 16, z = 7
18) x = 38 ft
19) x = 17.14 ft
20) $\frac{21\sqrt{3}}{2}$ cm
21) $12\sqrt{2}$ ft
22) $8\sqrt{10}$ mm
23) a) $4\sqrt{3}$
    b) $\frac{\sqrt{10}}{2}$
    c) $30\sqrt{2}$
24) $m\angle 1 = 21°$
    $m\angle ABC = 62°$
    $m\angle DAB = 118°$
    BC = 5
    AB = 9
    AE = 4
    DB = 12
25) x = 10
    QP = 13
    RP = 12
    $m\angle NQP = 67°$
    $m\angle MNP = 134°$
    $m\angle NMQ = 46°$
    $m\angle NRP = 90°$
    x = 10
    y = 20
26) $m\angle HGL = 90°$
    $m\angle 1 = 62°$
    $m\angle 2 = 28°$
    $m\angle 3 = 56°$
    $m\angle 4 = 124°$
    $m\angle 5 = 28°$
    GK = 34
    HL = 34
    GL = 16
    LK = 30.1
27) DA = 7
    TP = 14
    TR = 21
    $m\angle T = 78°$
    $m\angle R = 78°$
    $m\angle P = 102°$
    $m\angle TZD = 102°$
    $m\angle ADZ = 78°$
28) BE = 12
    $m\angle 1 = 45°$
    $m\angle 2 = 90°$
    BL = $12\sqrt{2}$
    ES = $6\sqrt{2}$
    x = 20
29) DY = 9
    SY = 12
    AN = $3\sqrt{58} \approx 22.85$
    SD = 15
    DN = $3\sqrt{58} \approx 22.85$
    $m\angle AYN = 90°$
    $m\angle ASD = 73.74°$
    $m\angle NAS = 119.93°$
30) Parallelogram
31) Isosceles Trapezoid
32) Circle N or Circle G
33) $\overline{GF}$
34) $\overline{PM}$
35) $\overline{CB}$ or $\overline{PM}$
36) $\overline{AJ}$
37) $\overline{VQ}$
38) $\angle EFG$ or $\angle GFL$
39) $\overline{ZX}$
40) No
41) No
42) 72
43) 90
44) 18
45) 223
46) 180
47) 252
48) 342
49) 72
50) a) $\overline{AF} \cong \overline{FE}$, $\overline{BC} \cong \overline{CD}$, $\widehat{AB} \cong \widehat{BE}$, $\widehat{AD} \cong \widehat{DE}$, $\widehat{BAD} \cong \widehat{BED}$
    b) AF = 4, AE = 8
51) x = 90, y = 27
52) x = 192, y = 84
53) x = 27, y = 99
54) x = 88
55) x = 60, y = 10.5
56) x = 4

57) $x = 5$

58) $x = 18$

59) $m\angle A = 64°, m\angle B = 70°, m\angle C = 116°, m\angle D = 110°$

60) P = 30 units, A = 48 units^2

61) P = 26 units, A = 36 units^2

62) P = 20 units, A = 24 units^2

63) P = 36 units, A = 60 units^2

64) P = 47 + $5\sqrt{2}+5\sqrt{3}$ units, A = $\frac{185+25\sqrt{3}}{2}$ units^2

65) P = 10 + $2\sqrt{73}$ units, A = 36 units^2

66) $100\sqrt{3}$ cm^2

67) 288 in^2

68) C = 16π ≈ 50.27 cm, A = 64π ≈ 201.06 cm^2

69) 1080 units^2

70) AL = 20π in, A = 240π in^2

71) 16π – 32 cm^2

72) 25π – 48 m^2

73) SA = 78π units^2, V = 90π units^3

74) SA = 1298 units^2, V = 2760 units^3

75) SA = 384 units^2, V = 384 units^3

76) SA = 314 units^2, V = 320 units^3

77) SA = 196π units^2, V = $\frac{1372\pi}{3}$ units^3

78) SA = 460π units^2, V = 2800π units^3