

Name: _____

Second semester Exam Honors geometry Agan and Mohyuddin

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1. A circular pizza has a diameter of 14 inches and is cut into 8 equal slices. To the nearest tenth of a square inch, which answer represents the area of one slice?

F 615.8

G 44.0

H 22.0

J 19.2

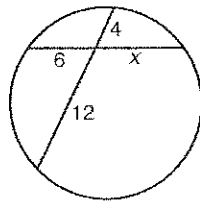
2. What is the value of x ?

A 2

B 8

C 10

D 18



3. An arc in a circle with a radius of 15 meters measures 48° . What is the arc length to the nearest tenth?

F 4 m

H 48 m

G 12.6 m

J 112.5 m

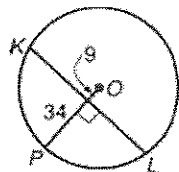
4. To the nearest tenth, what is KL ?

A 26.3

B 42.0

C 52.6

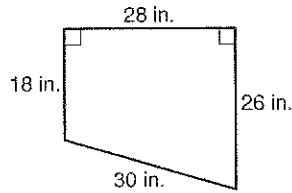
D 84.1



5. To the nearest whole number, what is the area of a regular octagon with a side length of 8 centimeters?

- F 128 cm^2 H 309 cm^2
G 256 cm^2 J 618 cm^2

6. When Sandra lowered the venetian blind, it fell crooked and stopped as shown. What area of the window did the blind cover?



- A 102 in^2 C 660 in^2
B 616 in^2 D 812 in^2

7. A skateboard ramp is 3.5 feet high and 6 feet long along the horizontal. To the nearest degree, what is the measure of the angle that the ramp makes with a horizontal line?

- F 27° H 60°
G 30° J 63°

Two sides of a triangle measure

15 centimeters and 12 centimeters. The included angle measures 64° . To the nearest tenth, what is the length of the third side?

- A 6.0 cm C 19.2 cm
B 14.5 cm D 23.0 cm

8. Ann is 5 feet 3 inches tall. To find the height of a lamppost, she measured her shadow to be 8 feet 9 inches and the lamppost's shadow to be 12 feet. To the nearest inch, what is the height of the lamppost?

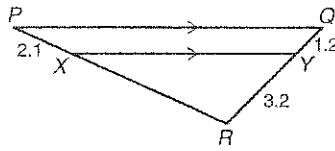
- A 6 ft 3 in. C 15 ft 0 in.
B 7 ft 2 in. D 20 ft 0 in.

9. The ratio of the sides of a triangle is

$3 : 5 : 6$. If the longest side is 8 inches, what is the length of the shortest side?

- A 2.25 in. C 4.5 in.
B 4 in. D 5 in.

10. What is PR ?



- F 4.1 H 6.2
G 5.6 J 7.7

11. Which statement is NOT always true?

- F A rhombus is a square.
G A rhombus is a parallelogram.
H A square is a rectangle.
J A rectangle is a parallelogram.

12. The vertices of a quadrilateral are $(4, 6)$, $(7, -2)$, $(-1, -5)$, and $(-4, 3)$. Which is the best classification for the quadrilateral?

- A parallelogram C rectangle
B rhombus D square

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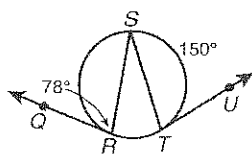
- A parallelogram C rectangle
B rhombus D square

15. Which statement is NOT always true?

- F A rhombus is a square.
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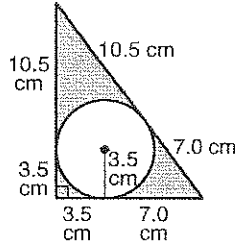
16. What is $m\angle RST$?

- F 27°
G 54°
H 76.5°
J 85.5°

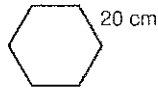


17. To the nearest tenth, what is the area of a sector with a radius of 8 centimeters and a central angle of 45° ?
- A 4.5 cm^2 C 50.3 cm^2
 B 25.1 cm^2 D 100.5 cm^2

18. To the nearest tenth, what is the area of the shaded region?
- F 35.0 cm^2
 G 44.0 cm^2
 H 51.5 cm^2
 J 112.0 cm^2

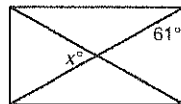


20. To the nearest tenth, what is the area of the regular hexagon?
- A 120.0 cm^2 C 519.6 cm^2
 B 240.0 cm^2 D 1039.2 cm^2



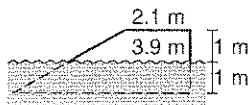
21. The legs of a right triangle measure 14 and 25. To the nearest tenth of a degree, what is the measure of the angle opposite the shortest side?
- F 29.2° H 55.9°
 G 34.1° J 60.8°
22. A forest ranger in a 100-foot observation tower sees a fire. The angle of depression to the fire is 4° . To the nearest foot, what is the horizontal distance between the tower and the fire?
- A 100 ft C 1433 ft
 B 1430 ft D 1434 ft

23. The figure is a rectangle. What is x ?



- A 29 C 61
 B 58 D 90

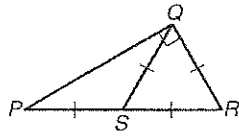
24. A water slide in the middle of a water park pool has opposite sides in the shape of a trapezoid. Half of the slide is below water level. What is the length of the base of the slide?



- F 5.7 m H 7 m
 G 6 m J 7.8 m

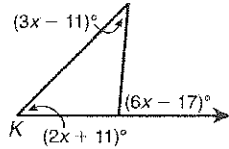
25. What is the classification of $\triangle PQR$ according to its angles?

- A right
- B obtuse
- C acute
- D equiangular



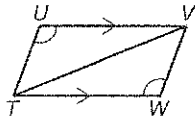
26. What is $m\angle K$?

- F 15°
- G 25°
- H 45°
- J 55°



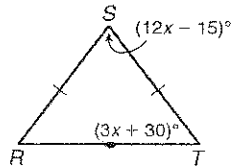
27. Which can be used to prove $\triangle TUV \cong \triangle VWT$?

- A SAS
- B AAS
- C ASA
- D HL



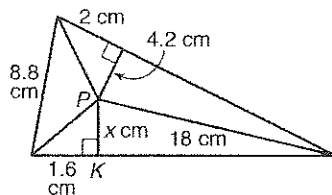
28. What is $m\angle R$?

- F 45°
- G 52.5°
- H 63°
- J 75°

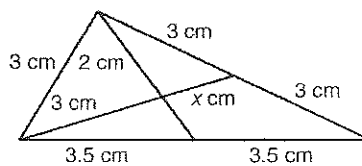


29. If P is the incenter, what is PK ?

- A 3.2 cm
- B 4.0 cm
- C 4.2 cm
- D 4.4 cm



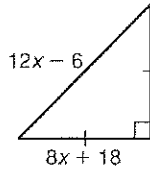
30. What is x ?



- F 1 cm
- G 1.5 cm
- H 1.75 cm
- J 2 cm

31. Which inequality shows all possible solutions for x ?

- F $x > 6$
- G $x \geq 6$
- H $\frac{1}{2} < x < 6$
- J $\frac{1}{2} < x \leq 6$



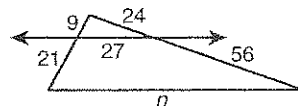
32. The circumference of a circle is 134.7 square centimeters. What is the diameter of the circle to the nearest tenth?

- F 6.5 cm
- G 13.1 cm
- H 21.4 cm
- J 42.9 cm

33. What is $\sin 49^\circ$ to the nearest tenth?

- A 0.7
- B 0.8
- C 1.2
- D 1.3

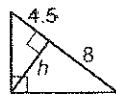
34. What is the value of n ?



- F 39
- G 54
- H 63
- J 90

35. What is the value of h ?

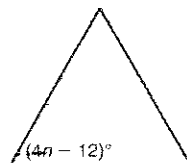
- A 6
- B 7.5
- C 10
- D 12.5



36. The measures of the interior angles of a polygon total 1620° . How many sides does the polygon have?

- A 6
- B 7
- C 9
- D 11

37. The triangle is an equilateral triangle. What is the value of n ?



- F 3
- G 18
- H 25.5
- J 48

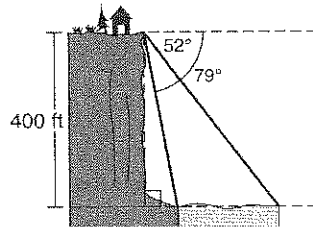
38. The slope of a line is -8 . What is the slope of a line that is perpendicular to that line?

- A -8 C $\frac{1}{8}$
 B $-\frac{1}{8}$ D 8

39. What is the slope of the line whose equation is $y + 9 = 4(x - 1)$?

- F -4 H $\frac{1}{4}$
 G -1 J 4

40. From the top of a canyon, the angle of depression to the far side of the river is 52° . The angle of depression to the near side of the river is 79° . The depth of the canyon is 400 feet. To the nearest foot, how wide is the river at the bottom of the canyon?



- A 104 ft C 235 ft
 B 204 ft D 785 ft

41. One angle of a rhombus measures 60° . Each side measures 28 inches. What is the area to the nearest square inch?

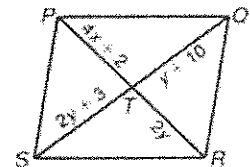
- A 392 in^2 C 784 in^2
 B 679 in^2 D 1358 in^2

42. The apothem of a 40-sided regular polygon is 11.4 meters. To the nearest square meter, what is its area if each side measures 1.9 meters?

- F 266 m^2 H 532 m^2
 G 433 m^2 J 866 m^2

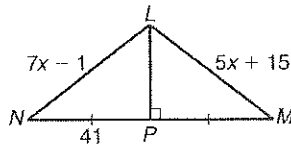
43. $PQRS$ is a

parallelogram. What is the value of x ?



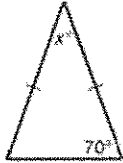
- A 3 C 14
 B 4.5 D 42

44. \overline{LP} is the perpendicular bisector of \overline{NM} . What is LM ?



- F 45 H 77.5
G 55 J 86

45. What is the value of x ?



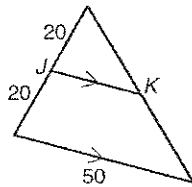
- F 20
G 30
H 40
J 70

46. Which are the side lengths of an obtuse triangle?

- A 8, 11, 15 C 8, 9, 11
B 8, 11, 11 D 8, 8, 11

47. What is JK ?

- F 20
G 40
H 25
J 50



48. Two sides of a triangle are 15 inches and 18 inches long. Which is the least possible whole-number length of the third side?

- A 1 in. C 3 in.
B 2 in. D 4 in.

49. One leg of a 45° - 45° - 90° triangle measures 12 centimeters. What is the length of the hypotenuse?

- F $4\sqrt{3}$ cm H $12\sqrt{2}$ cm
G $6\sqrt{2}$ cm J $12\sqrt{3}$ cm

50. What is the measure of one interior angle of a regular polygon that has 40 sides?

- A 9° C 140°
B 40° D 171°

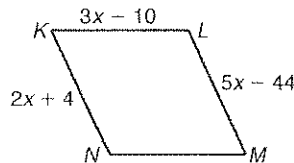
51. The diagonals of a rhombus are congruent. What is the best name for the figure?
 F parallelogram H rectangle
 G rhombus J square
52. In $\triangle RST$, $m\angle S = 49^\circ$ and $m\angle T = 52^\circ$. Which list shows the side lengths from least to greatest?
 F ST, RT, RS H RT, RS, ST
 G ST, RS, RT J RT, ST, RS

53. What is the slope of a line parallel to a

line whose slope is $-\frac{5}{2}$?

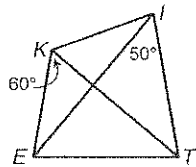
- F $-\frac{5}{2}$ H $\frac{2}{5}$
 G $-\frac{2}{5}$ J $\frac{5}{2}$

54. $KLMN$ is a parallelogram. What is the length of \overline{MN} ?



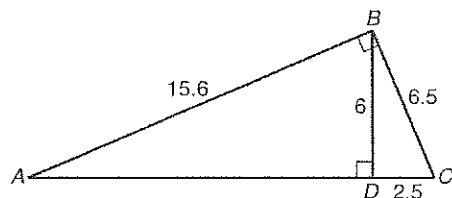
- A 32 C 38
 B 36 D 41

55. $KITE$ is a kite.
 What is $m\angle ITE$?



- F 30° H 80°
 G 40° J 120°

56. What is AD ?



- F 2.5 H 11.9
 G 6 J 14.4

57. The altitude of an equilateral triangle measures $8\sqrt{3}$. What is the length of one side?

- A 4 C 16
 B 8 D $16\sqrt{3}$

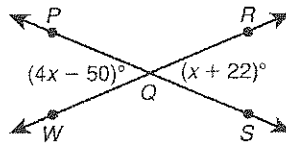
58. The circumference of a circle is 16π meters. What is the area of the circle?

- F $8\pi \text{ m}^2$ H $256\pi \text{ m}^2$
 G $64\pi \text{ m}^2$ J $1024\pi \text{ m}^2$

59. Which is the measure of a right angle?

- A 80° C 100°
 B 90° D 180°

60. What is the measure of $\angle P Q W$?

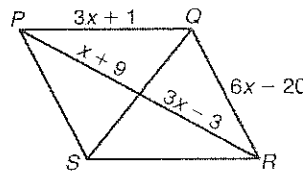


- F 44.4° H 46.0°
 G 45.6° J 63.6°

61. The length and width of a rectangle are $(x + 3)$ and $(x - 4)$, respectively. The area is 120 square units. What is the perimeter of the rectangle?

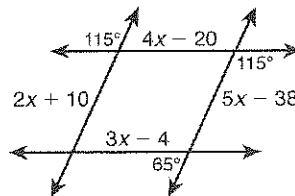
- A 21 units C 42 units
 B 23 units D 46 units

62. $PQRS$ is a parallelogram. What is PR ?



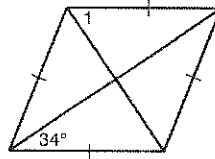
- A 23 C 28
 B 26 D 30

63. If possible, find a value for x .



- F 15 H 18
 G 16 J Not here

64. What is the measure of $\angle 1$?



- A 34° C 68°
B 56° D 112°

65. The hypotenuse of an isosceles right triangle is 6. What is its area?

- F 4.5 H 18
G 9 J 36

66. Four angles of a pentagon measure 30° , 73° , 150° , and 112° . What is the measure of the fifth angle?

- F 5°
G 65°
H 85°
J 175°

67. One base angle of an isosceles triangle measures 25° . What is the measure of the vertex angle?

- F 155°
G 130°
H 65°
J 40°

68. \overline{RL} bisects $\angle SRA$. Suppose $m\angle LRA = 45^\circ$. What type of angle is $\angle SRA$?

- F acute H right
G obtuse J straight

69. An equilateral triangle has an area of $9\sqrt{3}$ square inches. How many inches is the perimeter?

- A 9 C 18
B $9\sqrt{3}$ D $18\sqrt{3}$

70. The sum of the measures of two vertical angles is 44° . What is the measure of the supplement of one of those angles?

- F 158° H 68°
G 136° J 46°