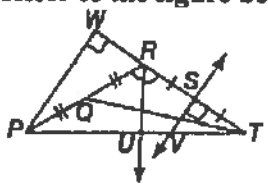
Integrated Math 2/2 Honors Review for Semester 1 Final Fall 2016

Indicate the answer choice that best completes the statement or answers the question.

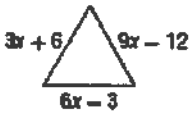
Refer to the figure below to answer the following question.



1. Name a perpendicular bisector.

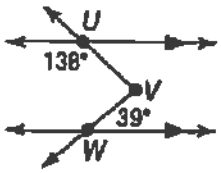
a. $\overline{RW}$ b. $\overleftrightarrow{SV}$ c. $\overline{QT}$ d. $\overrightarrow{RU}$

2. What is the length of the sides of this equilateral triangle?



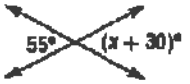
a. 42 b. 30 c. 15 d. 3

3. What is $m\angle UVW$?



a. 39
b. 42
c. 81
d. 138

4. Find the value of x.



a. 25 b. 35 c. 55 d. 125

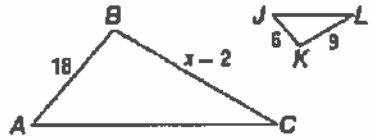
5. If the volume of a cylinder with a height of 3 feet is 75π cubic feet, find the surface area of the cylinder in square feet..

a. 25π b. 50π
c. 80π d. 30π

6. Which theorem or postulate can be used to prove that these two triangles are similar?

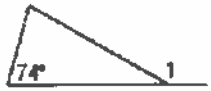
a. AA Similarity b. SAS Similarity c. SSA Similarity d. SSS Similarity

7. Find the value of x if $\triangle ABC \sim \triangle JKL$.



a. 10 b. 14 c. 25 d. 29

8. Find the possible values for $m\angle 1$.



a. $90 > m\angle 1 > 74$ b. $180 > m\angle 1 > 74$
c. $0 < m\angle 1 < 74$ d. $m\angle 1 = 106$

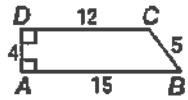
9. The length of one base of a trapezoid is 19 inches and the length of the median is 16 inches. Find the length of the other base.

a. 35 in. b. 19 in. c. 17.5 in. d. 13 in.

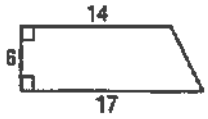
10. Quadrilateral $ABCD \sim$ quadrilateral $PQRS$. If $AB = 10$, $BC = 6$, $PS = 12$, and $QR = 4$, find the scale factor of $ABCD$ to $PQRS$.

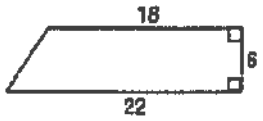
a. $\frac{1}{2}$ b. $\frac{3}{2}$ c. $\frac{5}{3}$ d. $\frac{5}{6}$

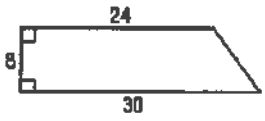
11. Find the polygon that is similar to *ABCD*.



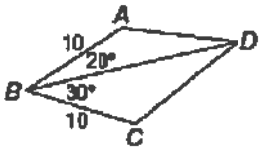
a. 

b. 

c. 

d. 

12. What is the relationship between the lengths of $\overline{DC}$ and $\overline{AD}$?

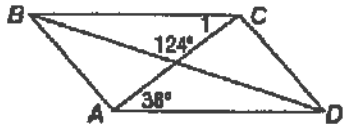


a. $DC < AD$ b. $DC > AD$ c. $DC = AD$ d. cannot tell

13. A sphere has a volume of 972 π cubic inches. Find the radius of the sphere.

a. 2 in. b. 3 in. c. 6 in. d. 9 in.

14. For parallelogram *ABCD*, find $m\angle 1$.



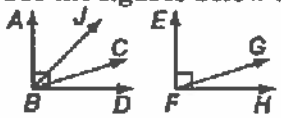
a. 19 b. 38 c. 52 d. 124

15. Find $m\angle W$ in parallelogram *RSTW*.

a. 17 b. 33

c. 55 d. 125

Use the figures below to answer the following question.



16. If $\angle ABC \cong \angle EFG$, and $m\angle ABC = 72$, find $m\angle GFH$.

a. 18 b. 72 c. 90 d. 108

17. Which of the following sets of numbers can be the lengths of the sides of a triangle?

a. 12, 9, 4 b. 1, 2, 3 c. 5, 5, 10 d. $\sqrt{2}, \sqrt{5}, \sqrt{18}$

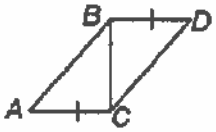
18. $ABCD$ is a parallelogram with diagonals intersecting at E. If $AE = 4x - 8$ and $EC = 36$, find the value of x.

a. 7 b. 11 c. 15.5 d. 36

19. Given $A(-1, 4)$, $B(1, 5)$, and $C(-5, 3)$, which coordinate will make $\overline{AB}$ parallel to $\overline{CD}$?

a. $D(-7, 4)$ b. $D(-6, 1)$ c. $D(4, -3)$ d. $D(-3, 4)$

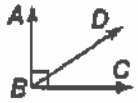
20. Which statement *must* be true in order to prove $\triangle ABC \cong \triangle DCB$ by SAS?



a. $\overline{CB}$ bisects $\angle ABD$ b. $\angle BCA \cong \angle CBD$

c. $\angle BDC \cong \angle CAB$ d. $\overline{AB} \cong \overline{BC}$

21. If $m\angle ABD = 56$, find $m\angle DBC$.



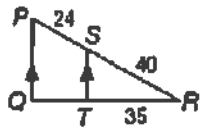
a. 124 b. 56 c. 44 d. 34

22. This fall, 126 students participated in the soccer program, while 54 played volleyball. What was the ratio of soccer players to volleyball players?

a. $\frac{3}{4}$ b. $\frac{3}{7}$

c. $\frac{4}{3}$ d. $\frac{7}{3}$

23. Find QT.

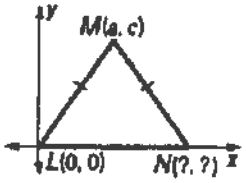


a. 15 b. 17 c. 19 d. 21

24. A postage stamp 25 millimeters wide and 40 millimeter tall is enlarged to make a poster. The poster is 4 feet wide. Find the height of the poster.

a. 2.5 ft b. 5.25 ft c. 5.8 ft d. 6.4 ft

25. What are the missing coordinates of this triangle?

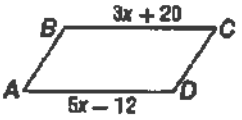


a. $(2a, 2c)$ b. $(2a, 0)$ c. $(0, 2a)$ d. $(a, 2c)$

26. A square pyramid has a height that is 8 centimeters long and a base with sides that are each 9 centimeters long. Find the volume of the pyramid.

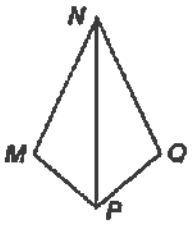
a. 648 cm^3 b. 324 cm^3 c. 216 cm^3 d. 162 cm^3

27. For parallelogram $ABCD$, find the value of x.



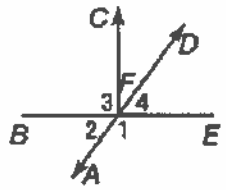
a. 4 b. 10.25 c. 16 d. 32

28. Quadrilateral $MNQP$ is made of two congruent triangles. $\overline{NP}$ bisects $\angle N$ and $\angle P$. In the quadrilateral, $m\angle N = 50$ and $m\angle P = 100$. What is the measure of $\angle M$?



a. 25 b. 50 c. 60 d. 105

Use the figure.

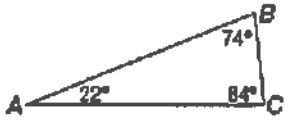


30. What can be assumed from the figure?

a. $\angle 1 \cong \angle 3$ b. $\angle 2 \cong \angle 4$

c. $\overline{BF} \cong \overline{FE}$ d. $\overline{CF} \perp \overline{BE}$

31. Name the longest side of $\triangle ABC$.



a. $\overline{AB}$ b. $\overline{BC}$ c. $\overline{AC}$ d. cannot tell

32. Find the value of x so that the quadrilateral is a parallelogram.

a. $7\frac{1}{3}$ b. 8 c. 12 d. 66

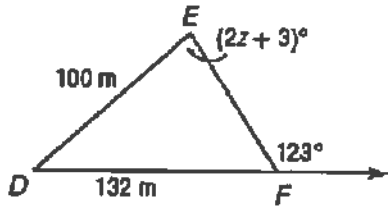
33. The volume of a cylinder is 62.8 cubic meters and the radius is 2 meters. Find the height of the cylinder. Round to the nearest meter.

a. 20 m b. 10 m c. 8 m d. 5 m

34. A 24-foot flagpole cast a 20-foot shadow. At the same time, the building next to it cast an 85-foot shadow. Find the height of the building.

a. $70\frac{5}{6}$ ft b. 89 ft c. $96\frac{1}{6}$ ft d. 102 ft

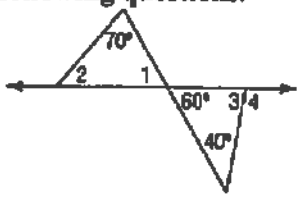
35. If $m\angle D = 42$, what is $m\angle E$?



a. 18 b. 40
c. 43 d. 81

36. Find the sum of the measures of the exterior angles of a convex 21-gon.
a. 17.4 b. 180 c. 360 d. 3420

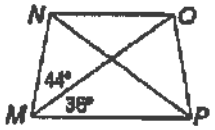
Use the figure below to answer the following questions.



37. What is $m\angle 4$?
a. 10 b. 60 c. 100 d. 80

38. In a rectangle, the ratio of the width to the length is 4:5. If the rectangle is 40 centimeters long, find its width.
a. 32 cm b. 36 cm c. 44 cm d. 50 cm

39. For isosceles trapezoid *MNOP*, find $m\angle MNP$.



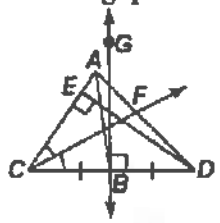
a. 44 b. 64 c. 80 d. 116

40. If $m\angle 1 = 5x - 4$ and $m\angle 2 = 52 - 9y$, which values for x and y would make $\angle 1$ and $\angle 2$ complementary?

a. $x = 2, y = 12$ b. $x = 27, y = \frac{1}{3}$

c. $x = 12, y = 2$ d. $x = \frac{1}{3}, y = 27$

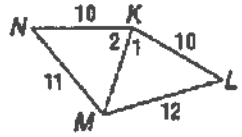
Refer to the figure below to answer the following questions.



41. Name an angle bisector.

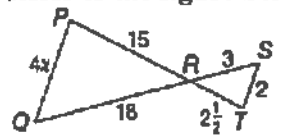
a. $\overline{DE}$ b. $\overline{AB}$ c. $\overleftrightarrow{GB}$ d. $\overrightarrow{CF}$

42. What is the relationship between the measures of $\angle 1$ and $\angle 2$?



a. $m\angle 1 = m\angle 2$ b. $m\angle 1 < m\angle 2$ c. $m\angle 1 > m\angle 2$ d. cannot tell

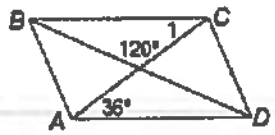
Refer to the figure below to answer the following questions.



43. Find the value of x.

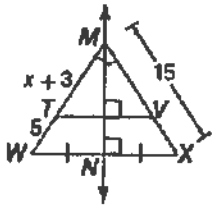
a. $2\frac{1}{2}$ b. 3 c. $3\frac{1}{2}$ d. 4

44. For parallelogram $ABCD$, find $m\angle 1$.



a. 120 b. 54 c. 36 d. 18

45. Find the value of x.



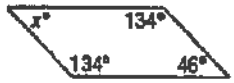
a. 5 b. 7 c. 10 d. 15

46. $RSTV$ is a rhombus. Which of the following statements is NOT true?

a. $\overline{RV} \cong \overline{TS}$ b. $\overline{RV} \perp \overline{TS}$

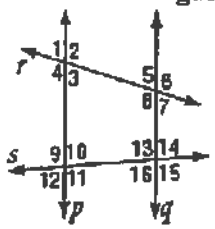
c. $\overline{RS} \parallel \overline{TV}$ d. $\angle R \cong \angle T$

47. Find the value of x so that this quadrilateral is a parallelogram.



a. 44 b. 46 c. 90 d. 134

Refer to the figure below to answer the following question. Identify the special name for the angle pair.

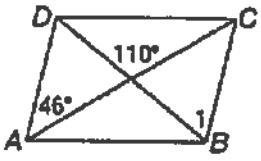


48. Given $\angle 1 \cong \angle 5$, which postulate or theorem justifies that $p \parallel q$?

a. Corresponding Angles Postulate b. Consecutive Interior Angles Theorem

c. Alternate Exterior Angles Theorem d. Alternate Interior Angles Theorem

49. Find $m\angle 1$ in parallelogram $ABCD$.



a. 64 b. 58

c. 46 d. 36

50. A square has side length 18 centimeters. Find the area of the square.

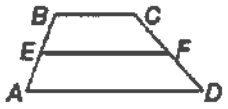
a. $36\ cm^2$ b. $40\ cm^2$

c. $81\ cm^2$ d. $324\ cm^2$

51. If the measure of each interior angle of a regular polygon is 108, find the measure of each exterior angle.

a. 5 b. 72 c. 90 d. 108

52. Given trapezoid $ABCD$ with median $\overline{EF}$, which of the following is true?



a. $EF = \frac{1}{2}AD$ b. $AE = FD$ c. $AB = EF$ d. $EF = \frac{BC + AD}{2}$

53. Which of the following sets of numbers can be the lengths of the sides of a triangle?

a. 12, 9, 2 b. 11, 12, 23 c. 2, 3, 4 d. $\sqrt{3}, \sqrt{5}, \sqrt{18}$

54. Which of the following is a property of all parallelograms?

a. Each pair of opposite angles is congruent.

b. Only one pair of opposite sides is congruent.

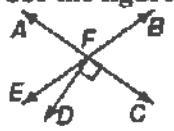
c. Each pair of opposite angles is supplementary.

d. There are four right angles.

55. The scale drawing of a porch is 8 inches wide by 12 inches long. If the actual porch is 12 feet wide, what is the length of the porch?

a. 8 ft b. 10 ft c. 16 ft d. 18 ft

Use the figure below to answer the following question.



56. If $m\angle AFB = 5x - 10$ and $m\angle BFC = 3x + 20$, find x.

a. 10 b. 15 c. 21.25 d. 23. 75

57. The area of the base of a prism is 96 square centimeters and the height is 9 centimeters. Find the volume of the prism.

a. $288\ cm^3$ b. $864\ cm^3$ c. $932\ cm^3$ d. $7776\ cm^3$

58. Let $\triangle ABC$ be an isosceles triangle with $\triangle ABC \cong \triangle PQR$. If $m\angle B = 154$, find $m\angle R$.

a. 154 b. 126

c. 26 d. 13

59. Find the sum of the measures of the interior angles of a convex 50-gon.

a. 9000 b. 8640 c. 360 d. 172.8

60. Which of the following sets of numbers cannot be lengths of the sides of a triangle?

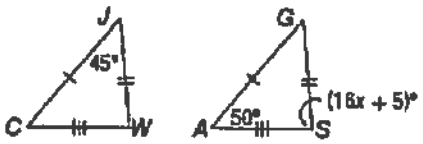
a. 1, 2, 3 b. 2, 3, 4

c. 3, 4, 5 d. 4, 5, 6

61. Choose the property that justifies the statement $m\angle A = m\angle A$.

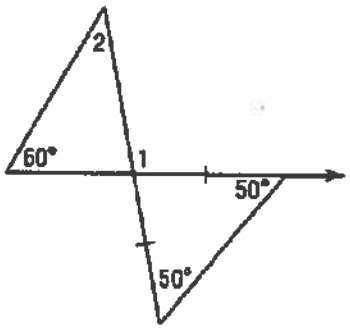
a. Reflexive b. Symmetric c. Transitive d. Substitution

62. If $\triangle CJW \cong \triangle AGS$, $m\angle A = 50$, $m\angle J = 45$, and $m\angle S = 16x + 5$, what is the value of x?



a. 85 b. 11.875 c. 6 d. 5

Find the missing angle measures.

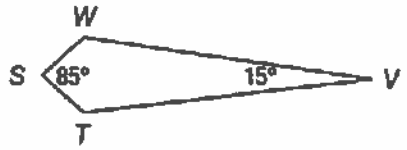


63. What is $m\angle 1$?

a. 50 b. 60

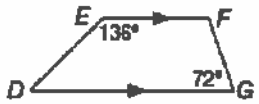
c. 100 d. 105

64. What is $m\angle T$ in kite $STVW$?



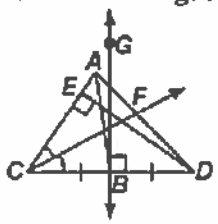
a. 100 b. 130
c. 95 d. 260

65. In trapezoid $DEFG$, find $m\angle D$.



a. 44 b. 72 c. 108 d. 136

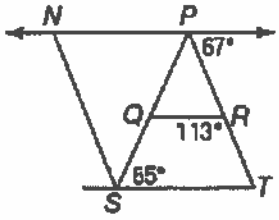
Refer to the figure below to answer the following question.



66. Name an altitude.

a. $\overline{DE}$ b. $\overline{AB}$ c. $\overleftrightarrow{GB}$ d. $\overrightarrow{CF}$

67. Determine which lines are parallel.



a. $\overleftrightarrow{NS} \parallel \overleftrightarrow{PT}$ b. $\overleftrightarrow{NP} \parallel \overleftrightarrow{ST}$

c. $\overleftrightarrow{QR} \parallel \overleftrightarrow{ST}$ d. $\overleftrightarrow{NP} \parallel \overleftrightarrow{QR}$