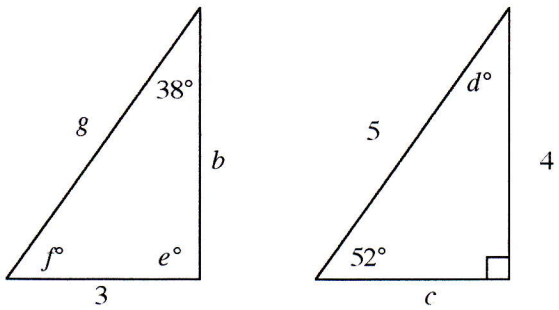
Name: _____ Class: _____ Date: _____ ID: A

Winter Benchmark/Midterm Exam Review 2012-2013

Multiple Choice

Identify the letter of the choice that best completes the statement or answers the question.

____ 1. The two triangles are congruent as suggested by their appearance. Find the value of d. The diagrams are not to scale.

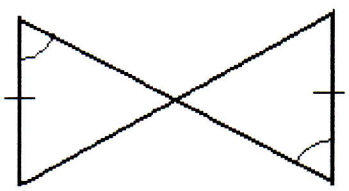


a. 4 b. 5 c. 3 d. 38

____ 2. Another name for an *if-then* statement is a ____. Every conditional has two parts. The part following *if* is the ____ and the part following *then* is the ____.

a. conditional; conclusion; hypothesis
b. hypothesis; conclusion; conditional
c. conditional; hypothesis; conclusion
d. hypothesis; conditional; conclusion

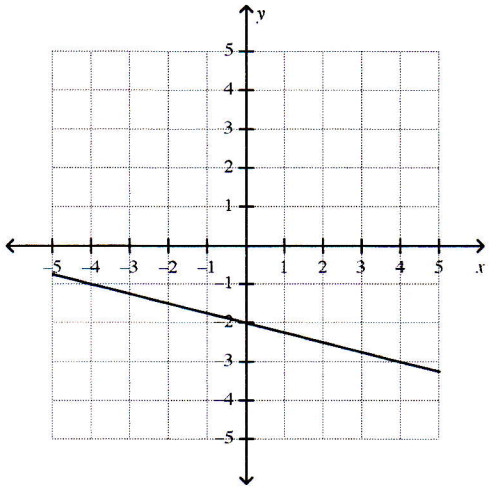
____ 3. Can you use the ASA Postulate, the AAS Theorem, or both to prove the triangles congruent?



a. either ASA or AAS
b. ASA only
c. AAS only
d. neither

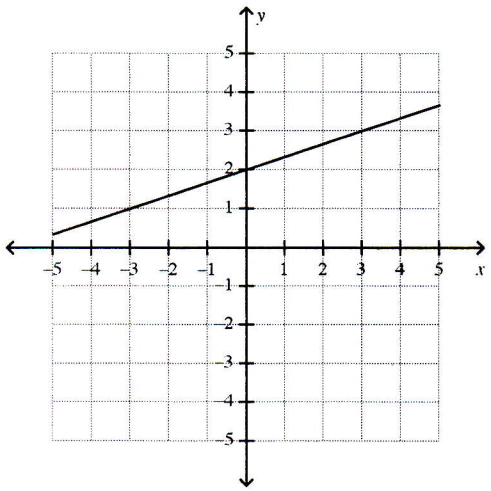
Find the slope of the line.

____ 4.



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

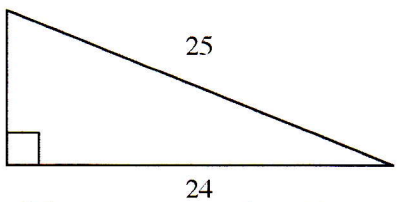
____ 5.



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

Find the length of the missing side. The triangle is not drawn to scale.

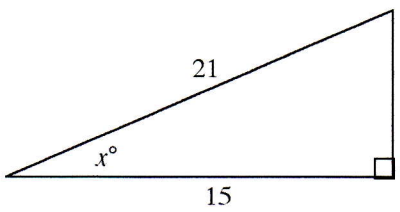
____ 6.



a. 35 b. 49 c. 7 d. 2

Find the value of x. Round to the nearest degree.

____ 7.



Not drawn to scale

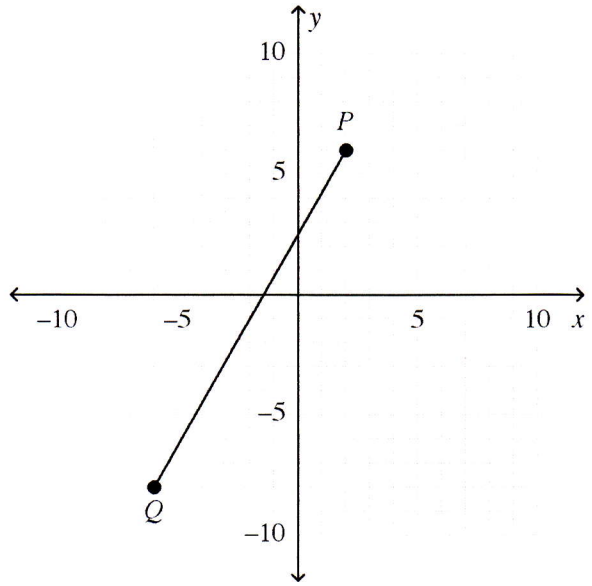
a. 41 b. 36 c. 46 d. 44

____ 8. Which statement is the Law of Detachment?
a. If $p \rightarrow q$ is a true statement and q is true, then p is true.
b. If $p \rightarrow q$ is a true statement and q is true, then $q \rightarrow p$ is true.
c. If $p \rightarrow q$ and $q \rightarrow r$ are true, then $p \rightarrow r$ is a true statement.
d. If $p \rightarrow q$ is a true statement and p is true, then q is true.

____ 9. Two sides of a triangle have lengths 10 and 15. What must be true about the length of the third side?
a. less than 25 b. less than 10 c. less than 15 d. less than 5

____ 10. Which three lengths can NOT be the lengths of the sides of a triangle?
a. 23 m, 17 m, 14 m
b. 11 m, 11 m, 12 m
c. 5 m, 7 m, 8 m
d. 21 m, 6 m, 10 m

____ 11. Find the midpoint of $\overline{PQ}$.

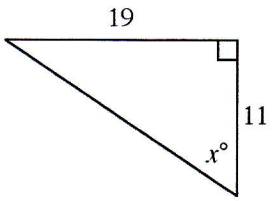


a. (–3,–1) b. (–2,0) c. (–2,–1) d. (–3,0)

____ 12. $M(9,8)$ is the midpoint of $\overline{RS}$. The coordinates of S are (10, 10). What are the coordinates of R?
a. (9.5,9) b. (11,12) c. (18,16) d. (8,6)

Find the value of x to the nearest degree.

____ 13.



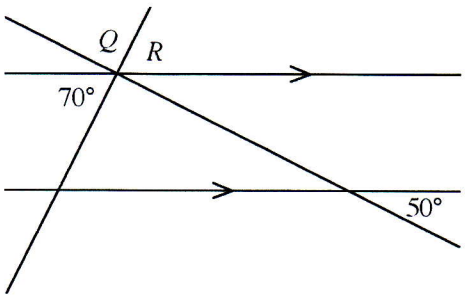
Not drawn to scale

a. 30 b. 60 c. 70 d. 85

____ 14. Find the coordinates of the midpoint of the segment whose endpoints are $H(8,2)$ and $K(6,10)$.

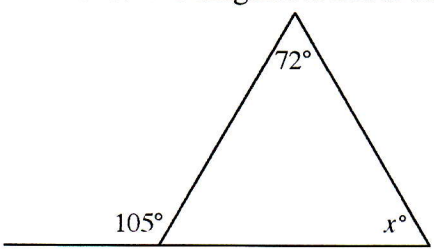
a. $(7,6)$ b. $(1,4)$ c. $(14,12)$ d. $(2,8)$

____ 15. Find $m\angle Q$. The diagram is not to scale.



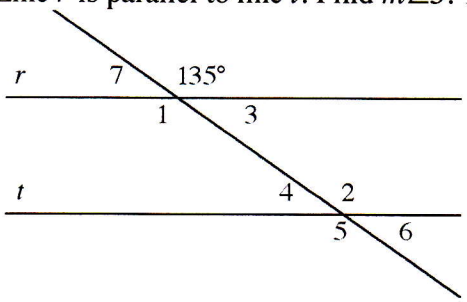
a. 60 b. 120 c. 110 d. 70

____ 16. Find the value of x. The diagram is not to scale.



a. 33 b. 162 c. 147 d. 75

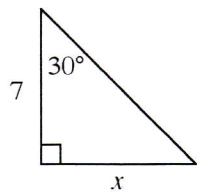
____ 17. Line r is parallel to line t. Find $m\angle 5$. The diagram is not to scale.



a. 45 b. 35 c. 135 d. 145

Find the value of x. Round your answer to the nearest tenth.

____ 18.



Not drawn to scale

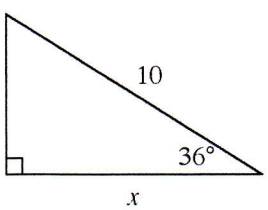
a. 3.5 b. 12.1 c. 6.1 d. 4

____ 19. Use the Law of Syllogism to draw a conclusion from the two given statements. Select ALL true answers.
If a number is a multiple of 64,then it is a multiple of 8.
If a number is a multiple of 8, then it is a multiple of 2.
a. If a number is a multiple of 64, then it is a multiple of 2.
b. The number is a multiple of 2.
c. The number is a multiple of 8.
d. If a number is not a multiple of 2, then the number is not a multiple of 64.

____ 20. What is the converse of the following conditional?
If a point is in the first quadrant, then its coordinates are positive.
a. If a point is in the first quadrant, then its coordinates are positive.
b. If a point is not in the first quadrant, then the coordinates of the point are not positive.
c. If the coordinates of a point are positive, then the point is in the first quadrant.
d. If the coordinates of a point are not positive, then the point is not in the first quadrant.

Find the value of x. Round to the nearest tenth.

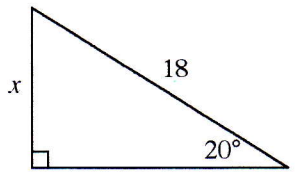
____ 21.



Not drawn to scale

a. 12.9 b. 8.5 c. 12.4 d. 8.1

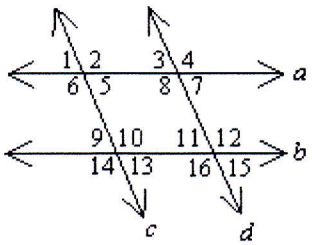
____ 22.



Not drawn to scale

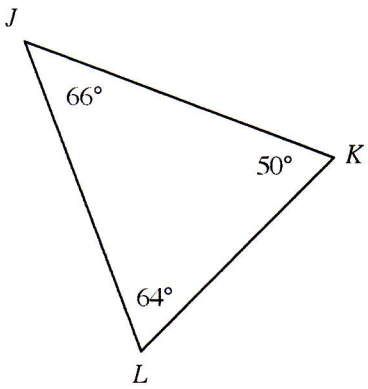
a. 52.6 b. 52.9 c. 6.2 d. 6.5

____ 23. Which angles are corresponding angles?



a. $\angle 8$ and $\angle 16$
b. $\angle 7$ and $\angle 8$
c. $\angle 4$ and $\angle 8$
d. none of these

____ 24. List the sides in order from shortest to longest. The diagram is not to scale.

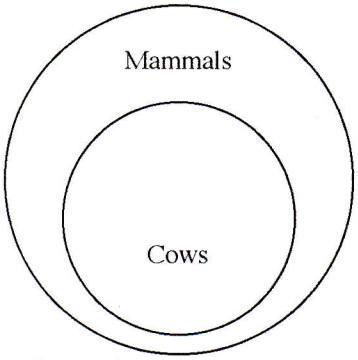


a. $\overline{LK}, \overline{LJ}, \overline{JK}$ b. $\overline{LJ}, \overline{LK}, \overline{JK}$ c. $\overline{LJ}, \overline{JK}, \overline{LK}$ d. $\overline{LK}, \overline{JK}, \overline{LJ}$

____ 25. Which statement is the Law of Syllogism?

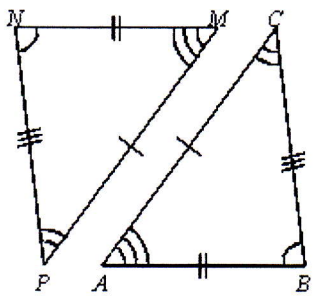
a. If $p \rightarrow q$ is a true statement and p is true, then q is true.
b. If $p \rightarrow q$ is a true statement and q is true, then p is true.
c. if $p \rightarrow q$ and $q \rightarrow r$ are true statements, then $p \rightarrow r$ is a true statement.
d. If $p \rightarrow q$ and $q \rightarrow r$ are true statements, then $r \rightarrow p$ is a true statement.

____ 26. Write the conditional statement illustrated by this Venn diagram.



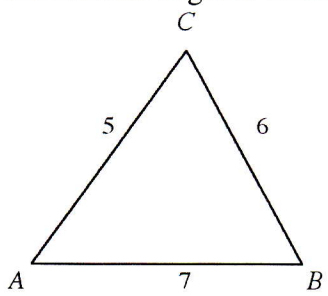
a. If an animal is a mammal, then it is a cow.
b. If an animal is a cow, then it is a mammal.
c. If an animal is a mammal, then it is not a cow.
d. If an animal is a cow, then it is not a mammal.

____ 27. $\angle ABC \cong$?



a. $\angle PMN$ b. $\angle NPM$ c. $\angle NMP$ d. $\angle MNP$

____ 28. Name the smallest angle of ΔABC. The diagram is not to scale.

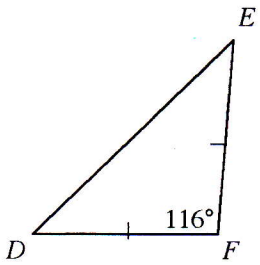


a. $\angle A$
b. $\angle C$
c. Two angles are the same size and smaller than the third.
d. $\angle B$

____ 29. Which three lengths could be the lengths of the sides of a triangle?

a. 12 cm, 5 cm, 17 cm
b. 10 cm, 15 cm, 24 cm
c. 9 cm, 22 cm, 11 cm
d. 21 cm, 7 cm, 6 cm

____ 30. Use the information in the figure. Find $m\angle D$.

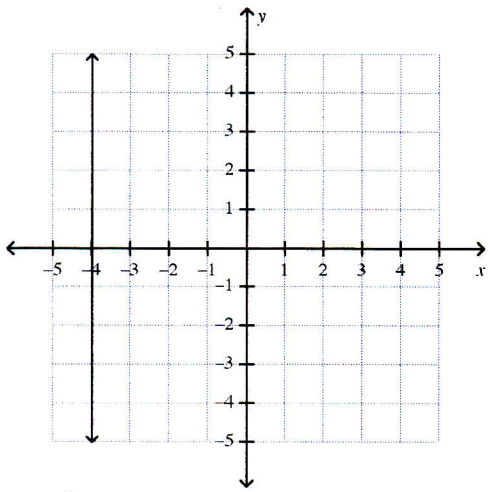


Drawing not to scale

a. 32° b. 122° c. 64° d. 58°

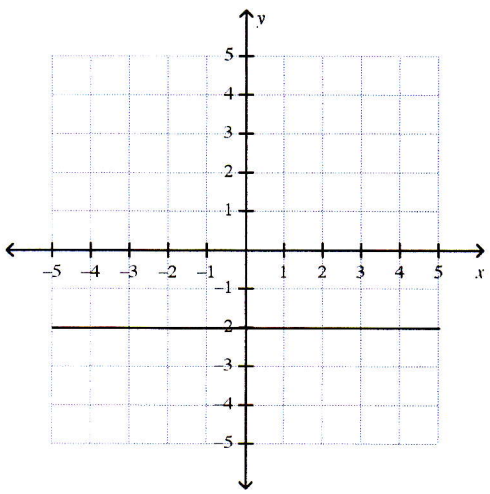
State whether the slope is 0 or undefined.

____ 31.



a. 0 b. undefined

____ 32.



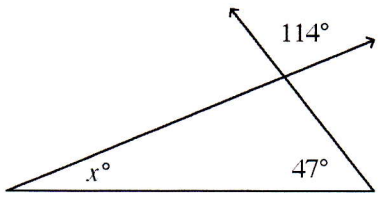
a. undefined b. 0

Find the slope of the line that passes through the pair of points.

____ 33. $(1,7),(10,1)$

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

____ 34. Find the value of the variable. The diagram is not to scale.



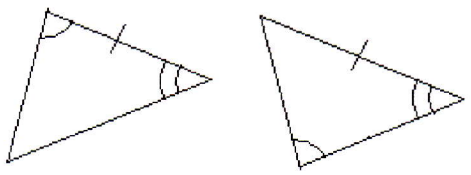
a. 66 b. 19 c. 29 d. 43

____ 35. Identify the hypothesis and conclusion of this conditional statement:
If two lines intersect at right angles, then the two lines are perpendicular.

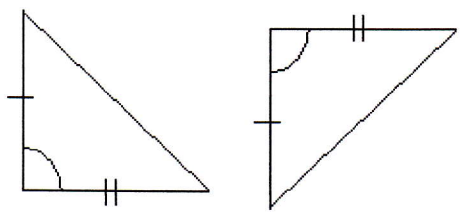
a. Hypothesis: The two lines are perpendicular. Conclusion: Two lines intersect at right angles.
b. Hypothesis: Two lines intersect at right angles. Conclusion: The two lines are perpendicular.
c. Hypothesis: The two lines are not perpendicular. Conclusion: Two lines intersect at right angles.
d. Hypothesis: Two lines intersect at right angles. Conclusion: The two lines are not perpendicular.

____ 36. In each pair of triangles, parts are congruent as marked. Which pair(s) of triangles is congruent by SAS?

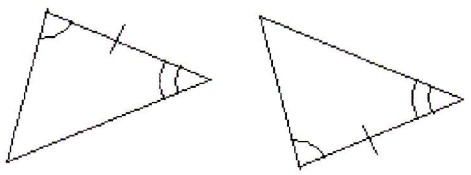
a.



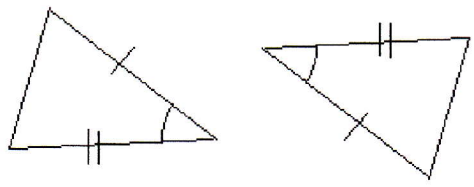
c.



b.



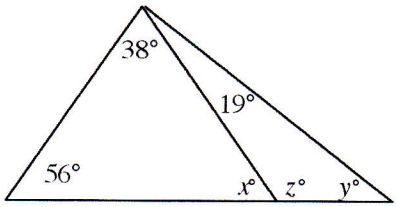
d.



____ 37. Find the distance between points $P(8,2)$ and $Q(3,8)$ to the nearest tenth.

a. 11 b. 7.8 c. 61 d. 14.9

____ 38. Find the values of x, y, and z. The diagram is not to scale.

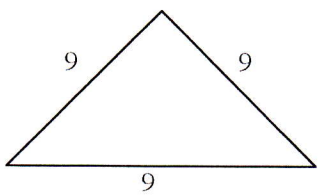


a. $x = 86,\ y = 94,\ z = 67$
b. $x = 67,\ y = 86,\ z = 94$
c. $x = 67,\ y = 94,\ z = 86$
d. $x = 86, y = 67, z = 94$

____ 39. If possible, use the Law of Detachment to draw a conclusion from the two given statements. If not possible, write *not possible*.
Statement 1: If $x = 3$, then $3x - 4 = 5$.
Statement 2: $x = 3$
a. $3x - 4 = 5$
b. $x = 3$
c. If $3x - 4 = 5$, then $x = 3$.
d. not possible

____ 40. Two sides of a triangle have lengths 10 and 18. Which inequalities describe the values that possible lengths for the third side?
a. $x \geq 8$ and $x \leq 28$
b. $x > 8$ and $x < 28$
c. $x > 10$ and $x < 18$
d. $x \geq 10$ and $x \leq 18$

____ 41. Classify the triangle by its sides. The diagram is not to scale.

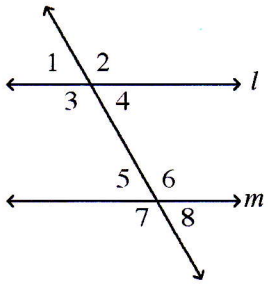


a. straight
b. scalene
c. isosceles
d. equilateral

____ 42. What is the inverse of this statement?
If he speaks Arabic, he can act as the interpreter.
a. If he does not speak Arabic, he can act as the interpreter.
b. If he speaks Arabic, he can't act as the interpreter.
c. If he can act as the interpreter, then he does not speak Arabic.
d. If he does not speak Arabic, he can't act as the interpreter.

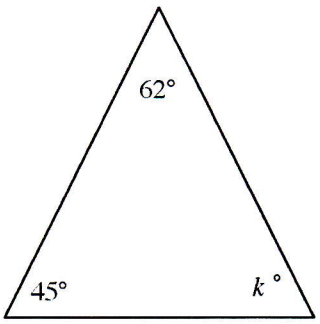
____ 43. A triangle has sides of lengths 12, 14, and 19. Is it a right triangle? Explain.
a. yes; $12^2 + 14^2 \neq 19^2$
b. no; $12^2 + 14^2 = 19^2$
c. no; $12^2 + 14^2 \neq 19^2$
d. yes; $12^2 + 14^2 = 19^2$

____ 44. Find the value of the variable if $m \parallel l, m\angle 1 = 2x + 44$ and $m\angle 5 = 5x + 38$. The diagram is not to scale.



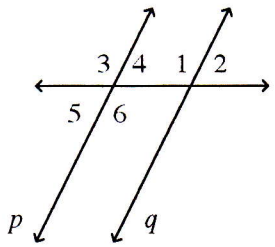
a. 1 b. 2 c. 3 d. –2

____ 45. Find the value of k. The diagram is not to scale.



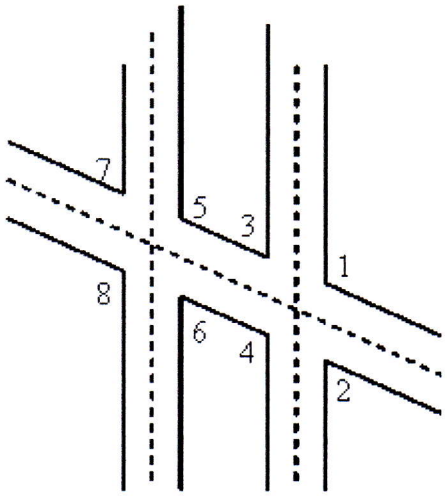
a. 17 b. 73 c. 118 d. 107

____ 46. $m\angle 1 = 6x$ and $m\angle 3 = 120$. Find the value of x for p to be parallel to q. The diagram is not to scale.



a. 114 b. 126 c. 120 d. 20

This diagram of airport runway intersections shows two parallel runways. A taxiway crosses both runways.



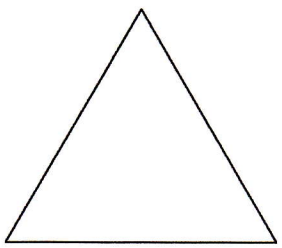
____ 47. How are $\angle 6$ and $\angle 2$ related?

a. corresponding angles
b. alternate interior angles
c. same-side interior angles
d. none of these

____ 48. Use the given information to list the sides of the triangle in order from shortest to longest. $m\angle P = 37°$, $m\angle R = 80°$, $m\angle Q = 63°$

a. $\overline{PR}, \overline{RQ}, \overline{PQ}$
b. $\overline{QR}, \overline{PR}, \overline{PQ}$
c. $\overline{PQ}, \overline{PR}, \overline{QR}$
d. $\overline{QR}, \overline{PQ}, \overline{PR}$

____ 49. Find the sum of the measures of the angles of the figure.



a. 540 b. 180 c. 360 d. 900

____ 50. Use the Law of Detachment to draw a conclusion from the two given statements.

If two angles are congruent, then they have equal measures.

$\angle P$ and $\angle Q$ are congruent.

a. $m\angle P + m\angle Q = 90$
b. $m\angle P = m\angle Q$
c. $\angle P$ is the complement of $\angle Q$.
d. $m\angle P \neq m\angle Q$