Name_____ Date_____ Period_____

Competency Test A
First Quarter

This test is worth 100 points. You will earn the 100 points if you get a score of 80% or higher. You may take this test over until you earn 80%. If you do not earn at least 80% you will get a 0 on this test.

1. *Statement 1: The 2002 Olympic skiing events were held in Utah.*
   Statement 2: John skied in Utah in 2002.
   Which of the following is a valid conclusion based on both of the statements above?

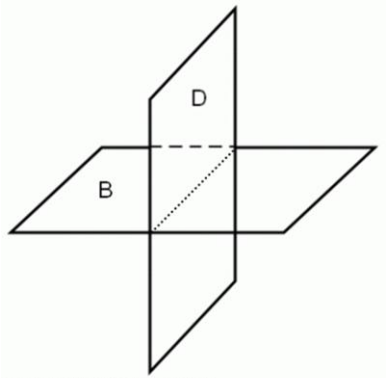
   a. John skied in the 2002 Olympics.

   b. John did not ski in the 2002 Olympics.

   c. If John did not ski in the 2002 Olympics, then he did not ski in Utah.

   d. If John skied in the 2002 Olympics, then he skied in Utah.

2. Given Plane B and Plane D interest, What does the intersection form?



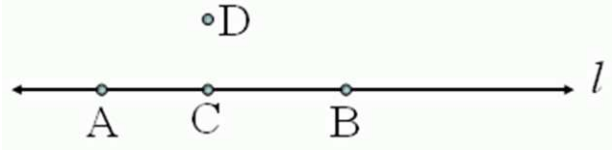
a. 

b. 

c. 

d. 

3. In the given diagram, what notation would be used for a line?



a. D b. $\overline{CB}$ c. l d. $\overrightarrow{AC}$

4. If Angelina lives in Nibley then she lives in Utah. What is the inverse of this conditional statement?

A. If Angelina does not live in Nibley then she does not live in Utah.

B. If Angelina does not live in Utah then she does not live in Nibley

C. If Angelina lives in Utah then she lives in Nibley.

D. If Angelina lives in Utah then she does not live in Nibley.

5. If I have a snack, then I will not be hungry. What is the converse of this conditional statement?

A. If I don't have a snack, then I will be hungry.

B. If I am hungry, then I didn't have a snack.

C. If I am not hungry, then I did have a snack.

D. If I have a snack, then I will be hungry.

6. A large organization uses a phone tree to contact members.

- The director first contacts 3 members. This is the 1st set of calls.
- Each member who was contacted in the 1st set of calls then contacts 3 different members who were not previously contacted. This is the 2nd set of calls.
- The pattern continues with each member contacting 3 different members who were not previously contacted.

The table below shows the number of members contacted in each set of cells.

Phone Tree Calls

Set of Calls	Number of Members Contacted in This Set of Calls
1st	3
2nd	9
3rd	27
4th	81

If the pattern continues, what is the number of members who would be contacted in the 6th set of calls?

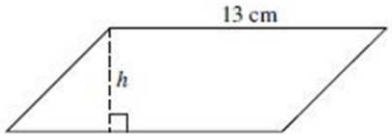
A. 216 B. 324 C. 486 D. 729

7. A rectangle has a perimeter of 44 inches and an area of 72 square inches. What are the lengths of the sides of the rectangle?

A. 2 inches and 36 inches B. 4 inches and 18 inches

C. 8 inches and 9 inches D. 11 inches and 11 inches

8. What is *h*, the height of the parallelogram represented below, if its area is 91 square centimeters?



a. 7cm b. 8 cm c. 10 cm c. 77 cm

9. Point U is between points T and B. TU = 2x-1, UB = 3x+2, and TB = 21.

What is the length of $\overline{TU}$?

a. 4 b. 7 c. 14 d. 18

10. Given the line segment $\overline{RQ}$, if the midpoint is (0,0) and point Q is (3,2), find the coordinates of point R.

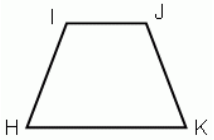
a. (6,8) b. (-2,-3) c. (-3,-2) d. (-3,2)

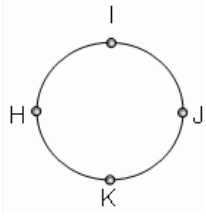
11. Find the coordinates of the midpoint of a segment whose endpoints are (5,-2) and (5,8).

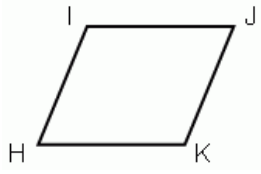
a. (-3,5) b. (5,3) c. (3,5) d. (-5,3)

12. Given: Points H, I, J, and K
Conjecture: H, I, J, and K are noncollinear.
Which figure is a counterexample of the information above?

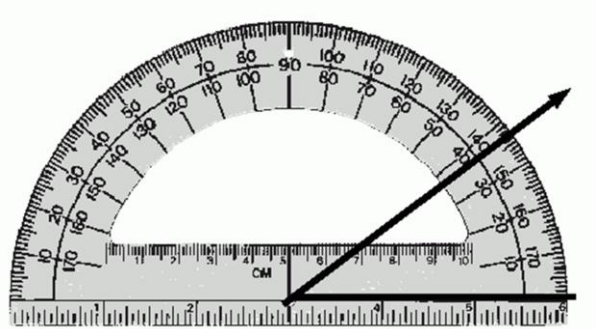
a. 

b. 

c. 

d. 

13. What is the measure of the angle shown below?

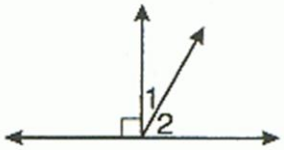


a. 37° b. 43° c. 143° d. 157°

14. In equation form, how would you write $\angle A$ and $\angle B$ are supplementary angles?

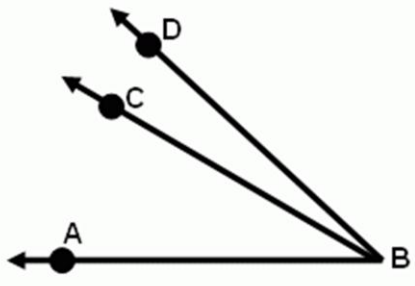
a. $m\angle A + m\angle B = 45^\circ$ b. $m\angle A + m\angle B = 75^\circ$ c. $m\angle A + m\angle B = 90^\circ$ d. $m\angle A + m\angle B = 180^\circ$

15. Given the following figure, which statement about ∠1 and ∠2 is **not** true?



a. both are acute angles
b. both are adjacent angles
c. both are supplementary
d. both are complementary

16. Given: m∠DBC = (2x + 7), m∠ABC = (9x – 5), and m∠DBA = 68.



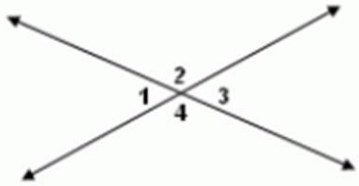
What is m∠DBC and m∠ABC?

a. $m\angle DBC = 19^\circ$ and $m\angle ABC = 49^\circ$
b. $m\angle DBC = 67^\circ$ and $m\angle ABC = 23^\circ$
c. $m\angle DBC = 49^\circ$ and $m\angle ABC = 19^\circ$
d. $m\angle DBC = 23^\circ$ and $m\angle ABC = 67^\circ$

17. If $\angle A$ and $\angle B$ are supplementary angles and $m\angle A = 4\,(m\angle B)$, what are the measures of $\angle A$ and $\angle B$?

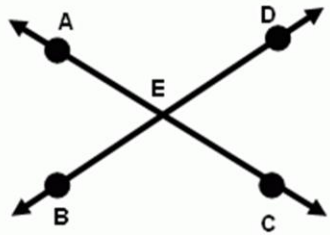
a. 67.5°, 22.5° b. 72°, 18° c. 135°, 45° d. 144°, 36°

18. If $m\angle 2 = 2x + 17$ and $m\angle 4 = 3x - 5$, then what is the $m\angle 1$?



a. 61° b. 33.6° c. 143.4° d. 119°

19. If the following figure, $m\angle AED = 137$. Which of the following statements is true?



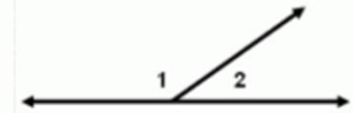
a. $\angle DEC$ and $\angle BEC$ are vertical angles

b. $\angle AEB$ and $\angle BEC$ are complementary angles

c. $\angle BEC = 43°$

d. $\angle DEC = 43°$

20. If $m\angle 1 = 7x - 12$ and $m\angle 2 = 3x - 8$, then



what is the $m\angle 2$?

a. 20° b. 52° c. 80° d. 128°