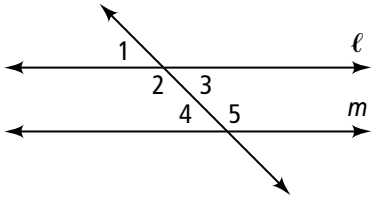
Topic 3 TEKS Cumulative Practice

Multiple Choice

Read each question. Then write the letter of the correct answer on your paper.

1. Which condition(s) will allow you to prove that $\ell \parallel m$?



I. $\angle 1 \cong 4$

II. $\angle 2 \cong \angle 5$

III. $\angle 3 \cong \angle 4$

IV. $m\angle 2 + m\angle 4 = 180$

A. III only **C.** II and III only

B. I and IV only **D.** I, II, III, and IV

2. Which property says that if $a = b$ and $b = c$, then $a = c$?

F. Reflexive Property of Equality

G. Symmetric Property of Equality

H. Transitive Property of Equality

J. none of these

3. Which of the following angle relationships can you use to prove that two lines are parallel?

A. congruent alternate interior angles

B. supplementary corresponding angles

C. congruent vertical angles

D. congruent same-side interior angles

4. How many planes are there through any three noncollinear points?

F. zero **H.** at least one

G. exactly one **J.** infinitely many

5. $\angle A$ and $\angle B$ are supplementary vertical angles. What is $m\angle B$?

A. 45 **C.** 135

B. 90 **D.** 180

6. Which types of angles can an obtuse triangle have?

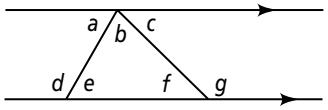
I. a right angle **II.** two acute angles

III. an obtuse angle **IV.** two vertical angles

F. I and II **H.** III and IV

G. I and IV **J.** II and III

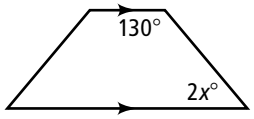
7. Given the diagram below, which expression could be used to find the sum of the angle measures in the triangle?



A. $f + g + c$ **C.** $a + b + e$

B. $a + b + c$ **D.** $d + e + g$

8. What is the value of x in the figure?



F. 20 **H.** 45

G. 25 **J.** 50

9. What is the measure of any exterior angle of an equiangular triangle?

A. 30 **C.** 90

B. 60 **D.** 120

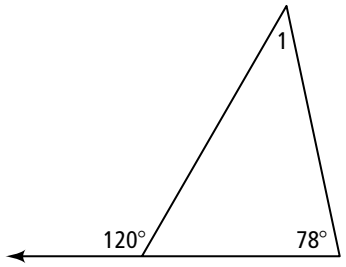
10. The measure of an angle is 6 less than twice its complement. What is the measure of the angle?

F. 32 **H.** 116

G. 58 **J.** 174

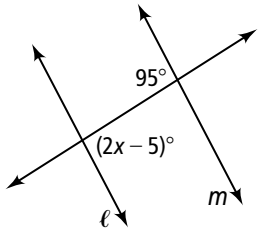
Gridded Response

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



12. Two angles of an isosceles triangle have measures 54.5 and 71. What is the measure of the third angle?

13. Find the value of x for which $\ell \parallel m$.



14. $\angle ABC$ and $\angle CBD$ form a linear pair. If $m\angle ABC = 3x + 20$ and $m\angle CBD = x + 32$, find the value of x.

15. $\overline{AB}$ has endpoints at -3 and 9. What is the coordinate of its midpoint?

Constructed Response

16. Is your friend's argument for the following situation valid? Explain.

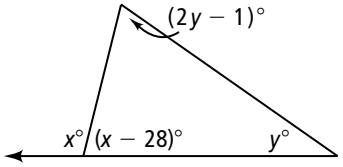
Given: If you buy a one-year membership at the gym, then you get one month free. You got a free month at the gym.

Your friend's conclusion: You bought a one-year membership.

17. Draw $\overline{MN}$. Then construct the perpendicular bisector of $\overline{MN}$.

18. The measures of the angles of a triangle are $2x$, $x + 24$, and $x - 4$. Find the value of x. Then find the measures of the angles.

19. Find each missing angle measure.

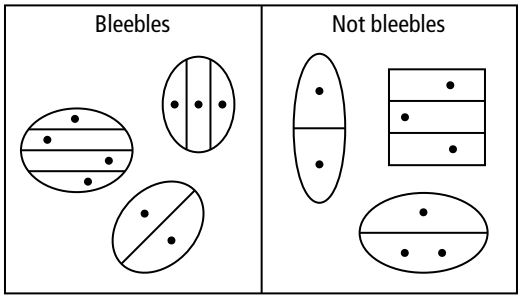


20. Suppose a line intersecting two planes A and B forms a right angle at exactly one point in each plane. What must be true about planes A and B? Explain your answer.

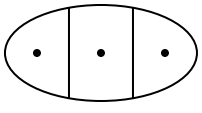
21. Write the converse, inverse, and contrapositive for the statement below. Then determine the truth value of each.

If a figure is a square, then it has at least two right angles.

22. Examples and nonexamples of *bleebles* are shown.



a. Is the figure at the right a *bleeble*? Explain your reasoning.



b. What is a definition for *bleeble*?

23. Write a paragraph proof.

Given: $\ell \parallel m$, $\angle 2 \cong \angle 4$

Prove: $n \parallel p$