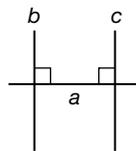


Warm Up 14

1. conjecture
2. A
3. B

Lesson Practice 14

- a. Line a is perpendicular to line b and to line c ; lines b and c are perpendicular
- b. b and c are parallel, so they are not perpendicular

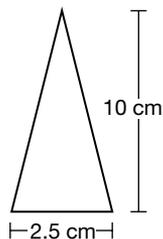


- c. $x^2 = 9$; $x = 3$
- d. $x = -3$
- e. The mass-volume ratios are not equal, so the data provides a counterexample.

Practice 14

1. a. No; There are no data in the table for a triangle with area less than 10 cm^2 but base length 3 cm or greater.

b. Sample:



2. never true; since three points define a plane, any three points are always coplanar, or never noncoplanar.

3. It is possible: first, double the area and then find the square root. You will then have one of the leg lengths. Then find the hypotenuse using the Pythagorean Theorem. Once you have determined the leg lengths, you can find the perimeter by adding them together.

4. Sample: $\angle AFB$ and $\angle BFC$, and $\angle BFC$ and $\angle CFD$ are adjacent angle pairs and $\angle BFC$ and $\angle CFE$ are a linear pair.

5. $4x + 1$

6. 2°

7. a. hypothesis: A shape is a pentagon.
conclusion: All of its interior angles are obtuse.

b. Sample:



8. B
9. These lines can be used to define a plane, as the three points by which they are named are not collinear, since they are the three vertices of a triangle. A plane is defined as any three noncollinear points.
10. a. $\triangle JKL$
b. $\triangle MNO$
c. $\triangle JKL$
11. No, they do not need to be adjacent; their measures just need to add up to 90° .
12. 
13. hypothesis: one dozen eggs cost \$2.49;
conclusion: two dozen eggs cost \$4.98.
14. The student found the difference between the x - and y -coordinates instead of between the x -coordinates and the y -coordinates. The answer should be 2.
15. About 527 mm^2
16. If two lines are parallel, then the alternate interior angles are congruent when they are cut by a transversal.
17. If the kicker makes a field goal, then the team scores three points.
18. If a number is squared, the result is positive.
19. Sample: $a = 1, b = 50$
20. isosceles, obtuse
21. Samples: same-side interior angles; any linear pairs formed

22. There are an infinite number of endpoints. If you think about the length as the radius of a circle, then there are an infinite number of points along the outside of a circle.
23. Two of the marked angles are alternate exterior angles and are congruent. By the Converse of the Alternate Exterior Angles Theorem, the lines are parallel.
24. To become a theorem, a conjecture must be proved true.
25. $(-4.5, -0.5)$,
 $(-3.5, 1.5)$, $(-1, -3)$
26. Three non-parallel planes can intersect at one point, one line, or in three lines any two of which are parallel. If two of the planes are parallel, then the intersection of the three planes will result in two parallel lines and if the three planes are parallel, there will not be an intersection.
27. 5
28. Sample: 
29. 440 ft^2
30. a. $(0, 0)$
b. Elkton; $(1, 1)$