

**Florida Geometry**  
**Lesson 2-2 - Practice and Problem-Solving Exercises Solutions**

5. A converse exchanges the hypothesis and conclusion, so the converse is "If  $x = 5$ , then  $4x + 8 = 28$ "  
 The inverse negates the hypothesis and conclusion, so the inverse is "If  $4x + 8 \neq 28$ , then  $x \neq 5$ ."  
 The contrapositive exchanges and negates the hypothesis and conclusion, so the contrapositive is "If  $x \neq 5$ , then  $4x + 8 \neq 28$ ."  
 All four statements are true.
6. A conditional is the if-then form of the statement, so the conditional is "If a number is an odd natural number less than 8, then the number is prime."  
 A converse exchanges the hypothesis and conclusion, so the converse is "If a number is prime, then it is an odd natural number less than 8."  
 The inverse negates the hypothesis and conclusion, so the inverse is "If a number is not an odd natural number less than 8, then it is not prime."  
 The contrapositive exchanges and negates the hypothesis and conclusion, so the contrapositive is "If a number is not prime, then it is not an odd natural number less than 8."  
 All four statements are false, and a counterexamples are 1 and 11.
10. Natalie is correct because a conditional statement and its contrapositive have the same truth value.
11. Switch the hypothesis and conclusion: If  $|x| = 6$ , then  $x = -6$ .  
 The converse is false because  $x$  could also be 6.
12. Switch the hypothesis and conclusion: If  $-y$  is positive, then  $y$  is negative. There are no counterexamples in the set of real numbers, so the converse is true.
15. A  
 Choice B has a false converse because if  $x^2 = 4$ , then  $x = 2$  or  $x = -2$ .  
 Choice C has a false converse because if  $x^2 = 6$ , then  $x = \sqrt{6}$  or  $x = -\sqrt{6}$ .  
 Choice D has a false conditional because if  $x^2 = 4$ , then  $x = 2$  or  $x = -2$ .  
 The only choice with a true conditional and a true converse is A.
16. H  

$$\left( \frac{-3+9}{2}, \frac{7+5}{2} \right) = \left( \frac{6}{2}, \frac{12}{2} \right) = (3, 6)$$
17. D  
 The shape is a five-sided polygon and a line segment can be drawn so that both endpoints are in the figure and some points on the segment lie outside the figure.
18. Answers may vary. Sample:  
 Begin with 1 and 1 as the first two terms; after that, each term is the sum of the two preceding terms.
19. Answers may vary. Sample:  
 4 collinear points
20. Answer may vary. Sample:  
 $0.5^2 = 0.25 < 0.5$
21.  $P = 2b + 2h = 2(6) + 2(12) = 12 + 24 = 36$  in.
24. Since  $60 \text{ cm} = 0.6 \text{ m}$ ,  
 $P = 2b + 2h = 2(11) + 2(0.6) = 22 + 1.2 = 23.2$  m  
 Since  $11 \text{ m} = 1100 \text{ cm}$ ,  
 $P = 2b + 2h = 2(1100) + 2(60) = 2200 + 120 = 2320$  cm.
25. Switch the hypothesis and the conclusion: If tomorrow is October 1, then today is September 30. Both the statement and its converse are true.