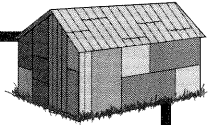


Additional Practice Problems for Activity 5



1. Make a drawing on grid paper that shows a roof that has a slope of $\frac{3}{5}$. Be sure to label the rise and the run of the roof and explain why the slope of the roof is $\frac{3}{5}$.
2. A right triangle has a base of six and a height of nine.
 - (a) Make a drawing of the triangle on grid paper.
 - (b) If the hypotenuse of the triangle represents the roof of a house, what is the rise and what is the run of the roof?
 - (c) Using your answers from part (b), what is the slope of the roof represented by the hypotenuse of the right triangle?
3. Draw a rectangle on grid paper so that one side has a length of two and an adjacent side has a length of five.
 - (a) Draw in one of the diagonals of the rectangle.
 - (b) What are the rise and the run of the diagonal that you have drawn? How do you know?
 - (c) What is the slope of the diagonal that you drew? Explain how you found your answer.
 - (d) If you drew in the other diagonal of the rectangle, would its slope be the same or different than the slope of the first diagonal? Make a conjecture. Can you prove that your conjecture is true for diagonals of any rectangle?
4. Draw a square and then draw in one diagonal of the square going from the lower left corner to the upper right corner.
 - (a) Can you find the slope of the diagonal of the square without knowing the edge length of the square? Explain your reasoning.
 - (b) What do you think the slope of the diagonal of the square is? Explain how you found your answer.
 - (c) If you drew in the same diagonal for a smaller or larger square, would the slope of the diagonal be the same or different than the slope of the diagonal of your square that you found in part a)? Explain your reasoning.
 - (d) Based on your work in this problem, make a conjecture about the slope of the diagonal of any square? Can you prove this conjecture?

