Pathagorean quadratic essay

Pythagorean QuadraticCynthia HobbsMat221 Introduction to AlgebraInstructor: Andrea SchoohsOctober 13, 2013Pythagorean QuadraticFor this week's assignment we are asked to use factoring and the Pythagorean Theorem to solve problem 98 on page 371 of Elementary and Intermediate Algebra. The problem to solve is as follows: Ahmed has half of a treasure map, which indicates that the treasure is buried in the desert 2x + 6 paces from Castle Rock. Vanessa has the other half of the map. Her half indicates that to find the treasure, one must get to Castle Rock, walk x paces to the north, and then walk 2x + 4 paces to the east. If they share their information, then they can find x and save a lot of digging. What is x? The following diagram is used to determine the Pythagorean Theorem.

2x + 4x2x + 6Castle RockBecause this is a right triangle the Pythagorean Theorem (a2+b2= c2) must be used. With the Pythagorean Theorem the legs of every right triangle is a and b and the hypotenuse is c. For this problem let a = x, and b = 2x + 4, and c = 2x + 6. After making these measurements the Pythagorean Theorem we have x2+(2x+4)2= 2x+6 2. Then, by putting these measurements into the Theorem equation we have: x2+(2x+4)2= 2x+6 2 Distribution method must beusedxx2+2x+42x+4= 2x+6(2x+6)x2+4×2+8x+8x+16= 4×2+12x+12x+36 Next we combine like terms5×2+16x+16= 4×2+24x+36 Now we must move everything tothe left. x2-8x-20= 0 Now that we have the quadraticequation we must factor using the Three Term Method 1, -20; -1, 20; 2, -10; -2, 10; 4, -5; -4, 5; factor is 2-10.

(x+2) (x-10) = 0 To solve for x we use the zero factorproperty you solve the binomialsx+2 = 0 or x – 10 = 0 Creating a compound equation. x = -2 or x =

10 Possible solutions for the equationx = 10A negative number cannot be x. since we cannot walk a negative number of paces. x = 10 The solutionIn conclusion..

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