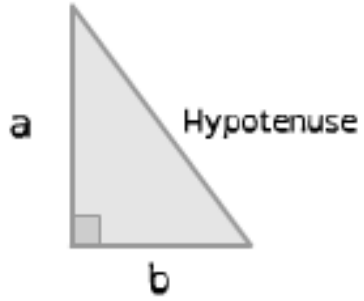
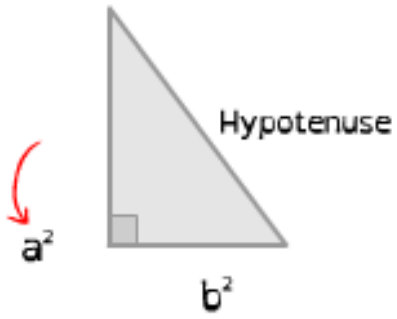
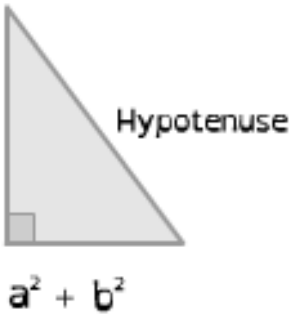
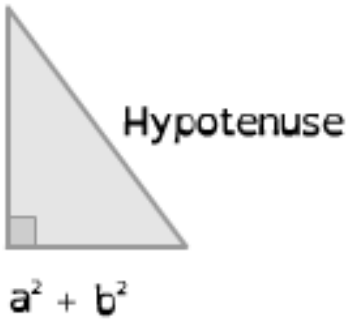
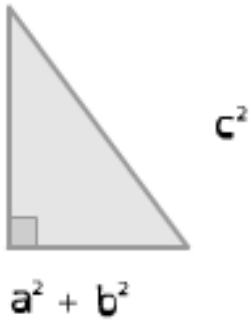
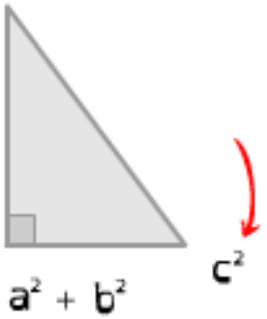
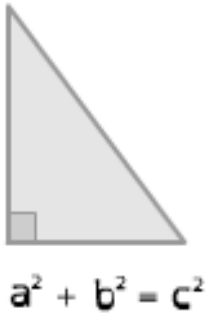
#	SHOT	NARRATOR
1	Applying the Pythagorean Theorem	
2		**The Pythagorean Theorem states that the measure**

3		**of two legs of a right triangle,**
4		**squared**

5		
6		**and added together,**

7		**equals the**
8		**square of**

9		**the**
10		**hypotenuse.**

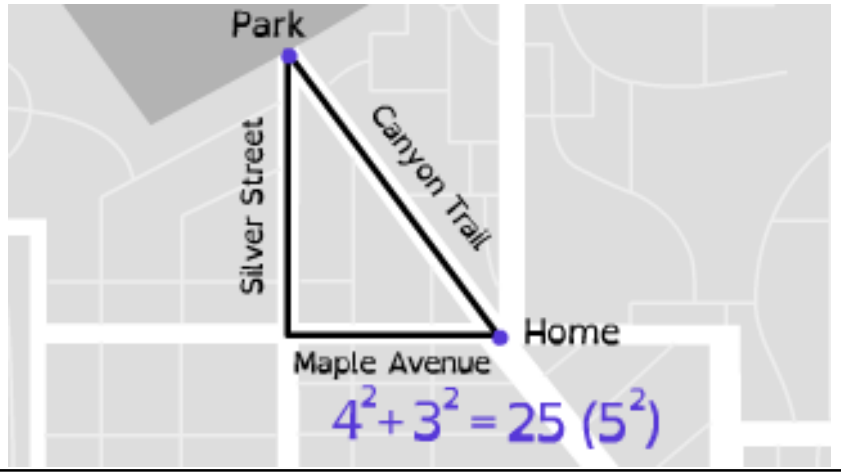
11		**The Pythagorean Theorem helps people solve real world problems.**
12		**Lucy usually bikes to the park**

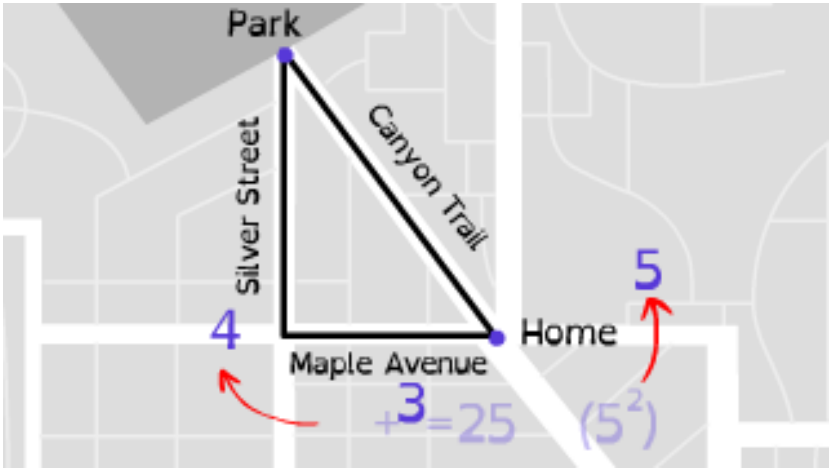
13		**along Maple Avenue then**
14		**up Silver Street.**

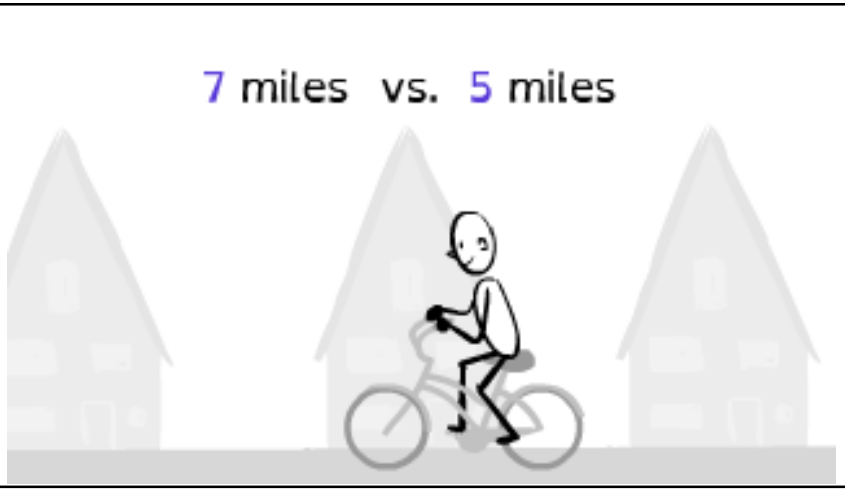
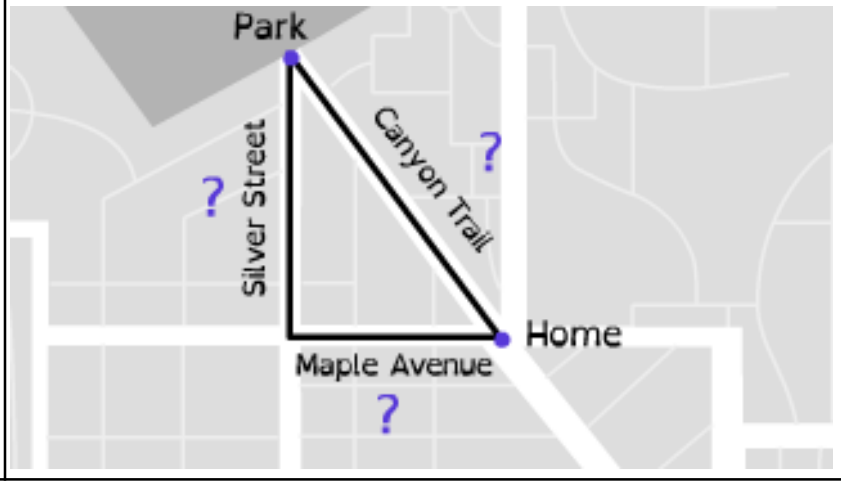
15		**Is Canyon Trail shorter?**
16		**She knows the two legs--**

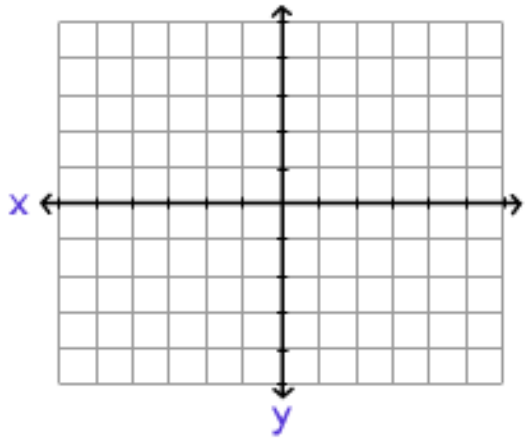
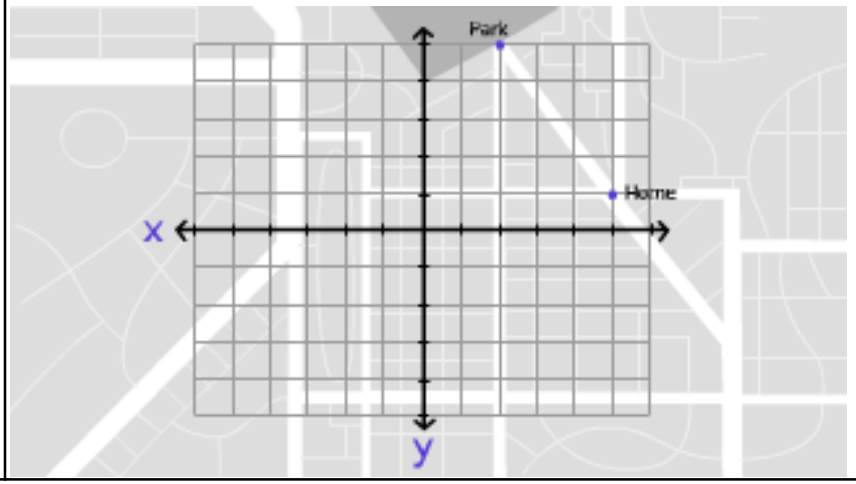
17		**Maple Avenue and Silver Street --**
18		**are three and four miles long.**

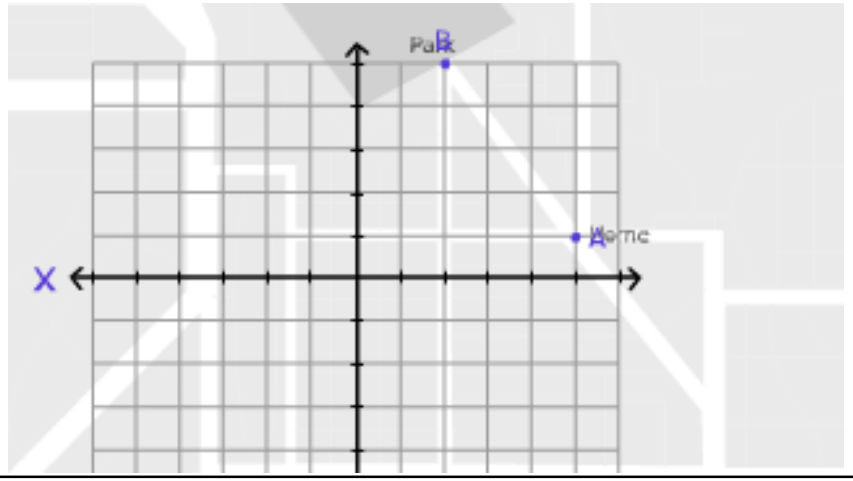
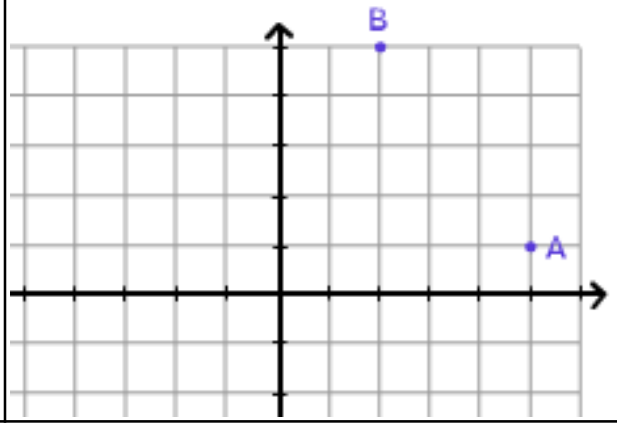
19		**Applying the Pythagorean Theorem,**
20		**three squared plus four squared**

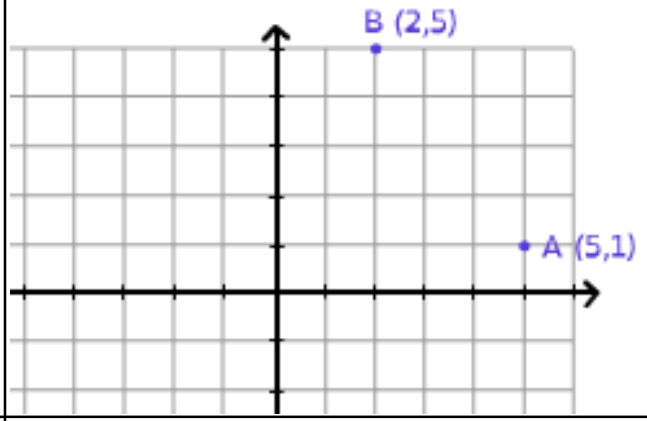
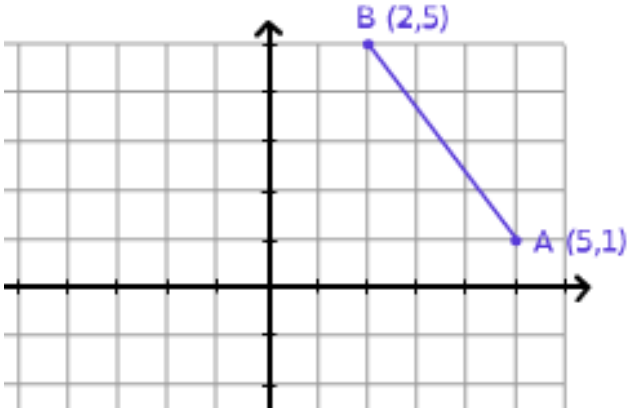
21		**equals twenty-five.**
22		**She knows that five squared is twenty-five.**

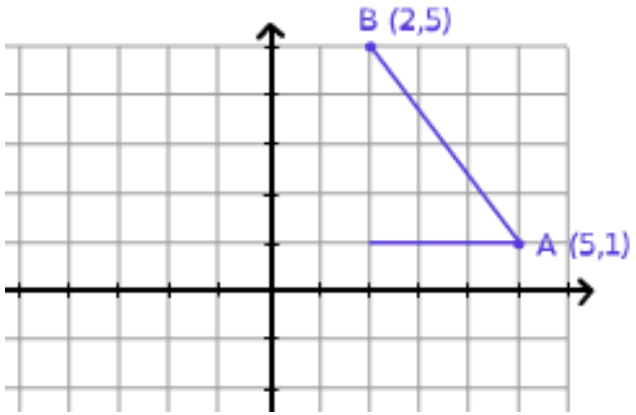
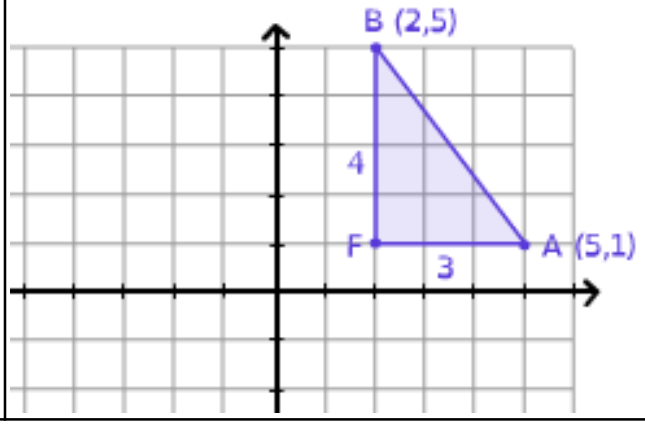
23		**So, the hypotenuse--the length of CanyonTrail--**
24		**is five miles.**

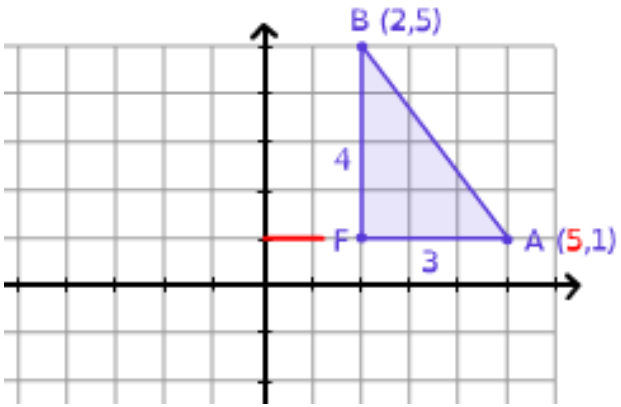
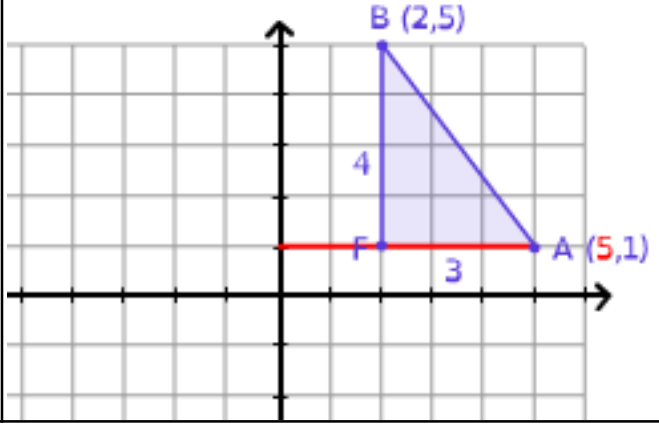
25		**Two miles less biking for Lucy!**
26		**What if Lucy doesn't know the lengths of Maple Avenue and Silver Street?**

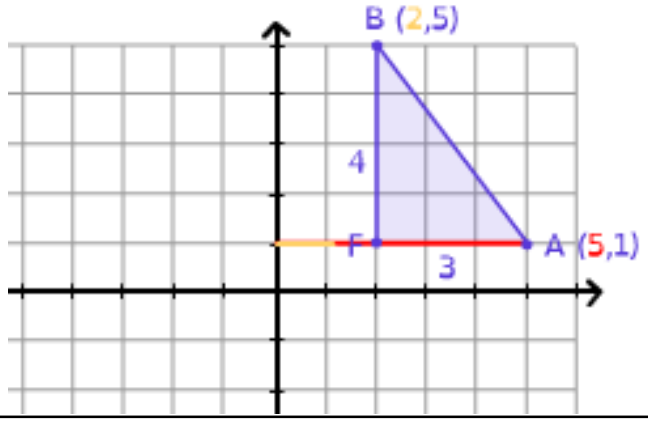
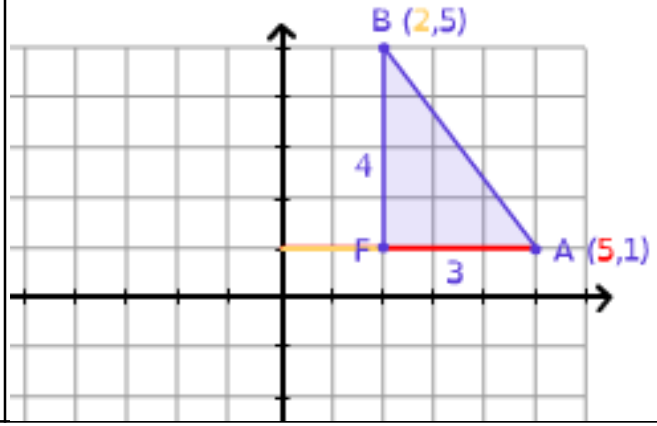
27		**A coordinate plane can help.**
28		**Lucy's House and**

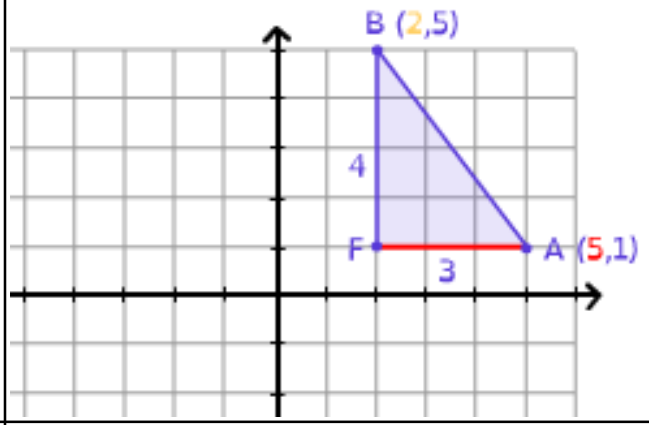
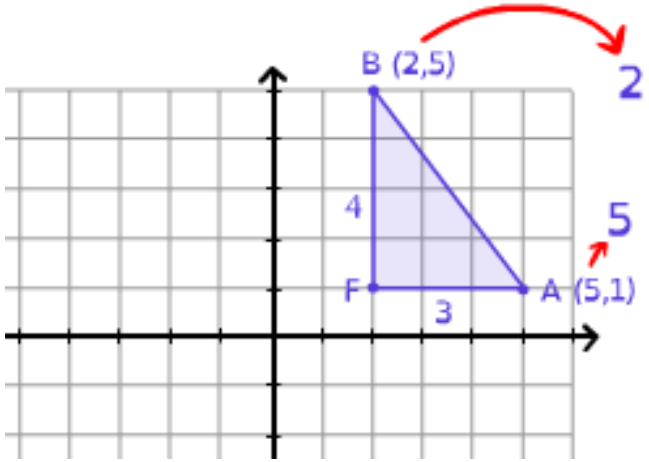
29		**the park can be**
30		**points on the plane.**

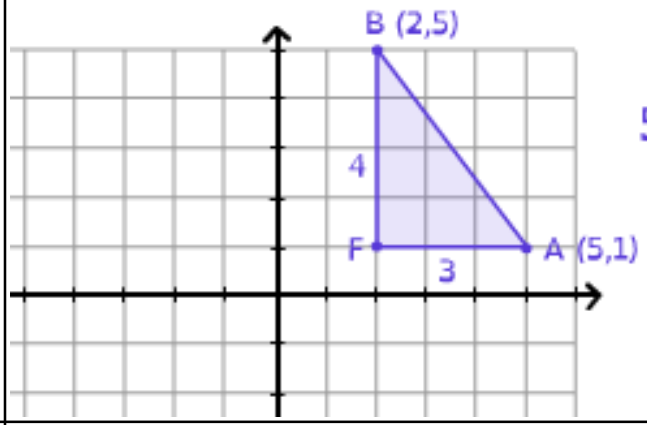
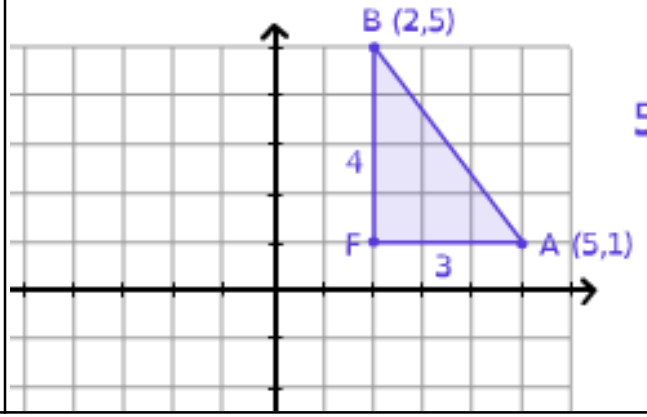
31		**One at five-one and the other at two-five.**
32		**To find the distance between A and B using the Pythagorean Theorem, she needs a right triangle.**

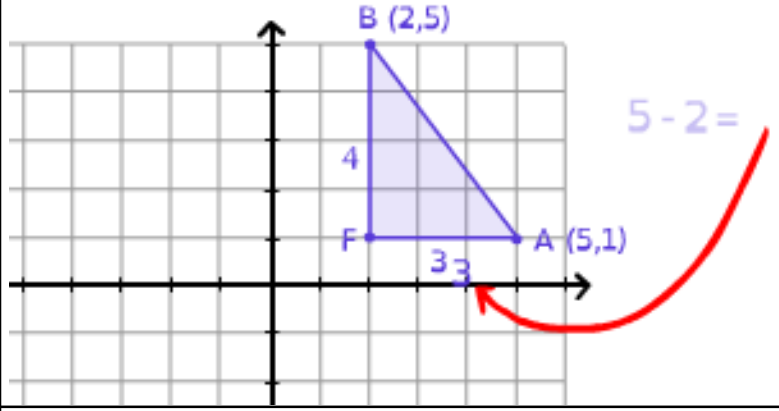
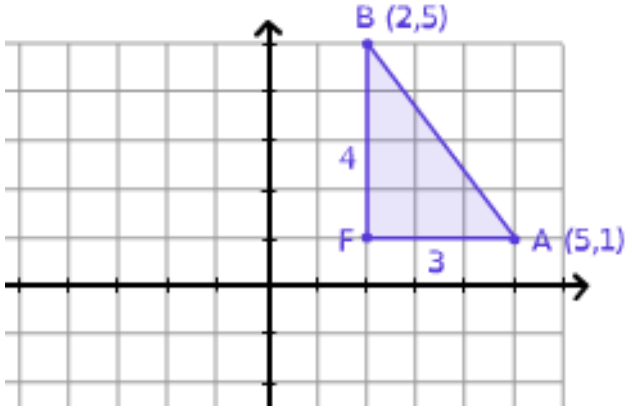
33		**One way to make one is to go three spaces left**
34		**and four spaces up.**

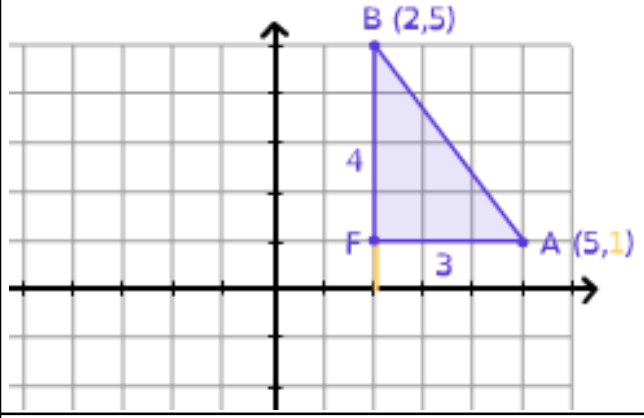
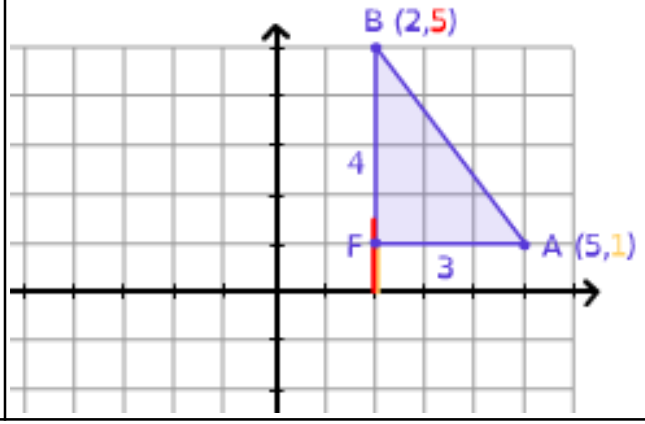
35		**For the horizontal leg,**
36		**take the x-distance of A**

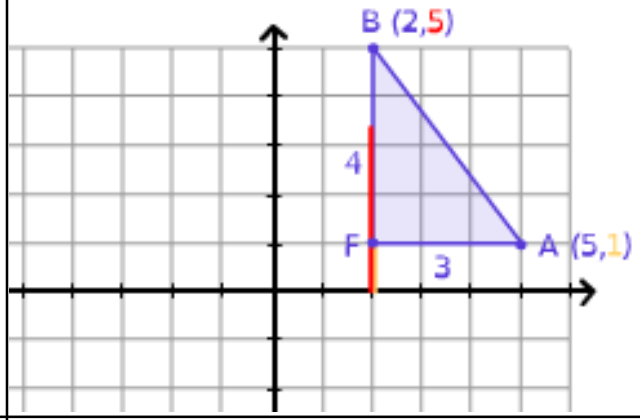
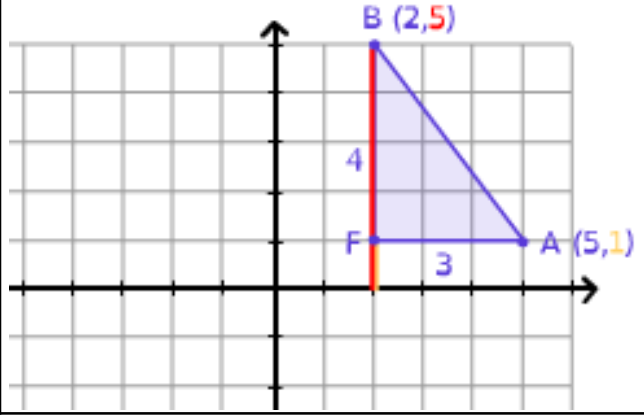
37		**and subtract the**
38		**x-distance of B.**

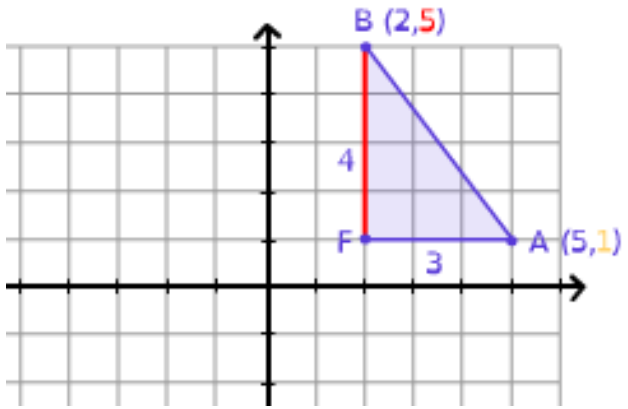
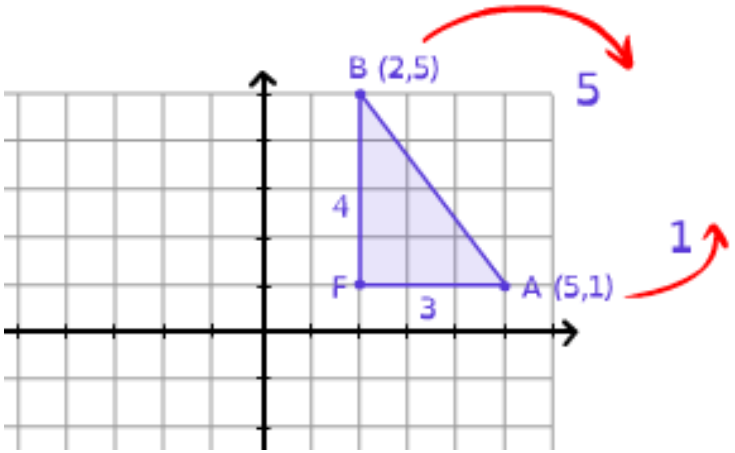
39		
40		**This is equivalent to**

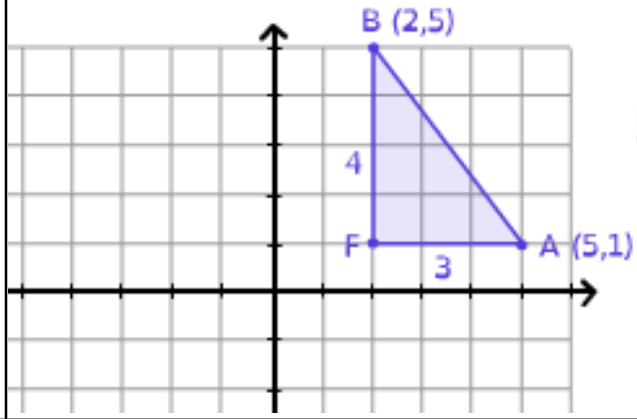
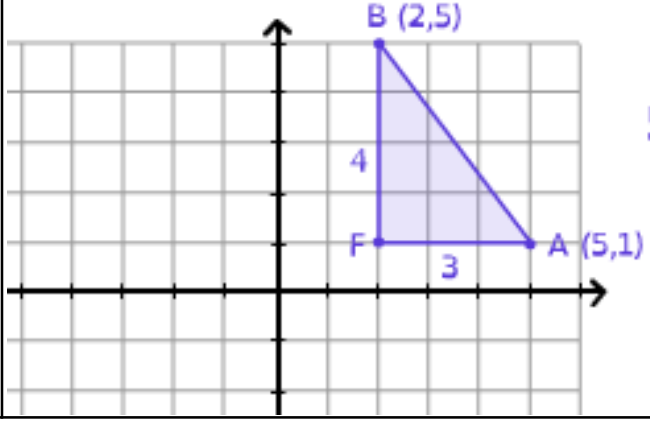
41	 5 - 2	**subtracting the x-coordinates**
42	 5 - 2 = 3	**of A and B.**

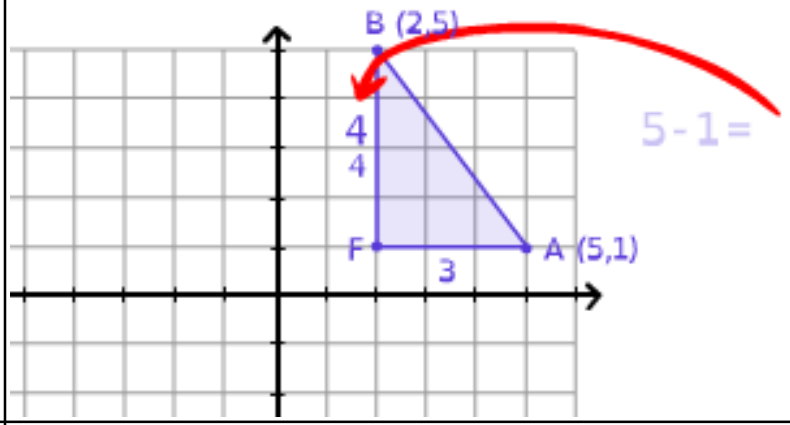
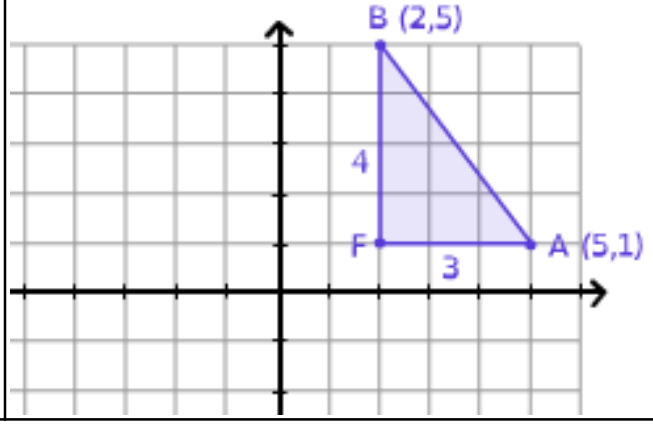
43		
44		**For the vertical leg,**

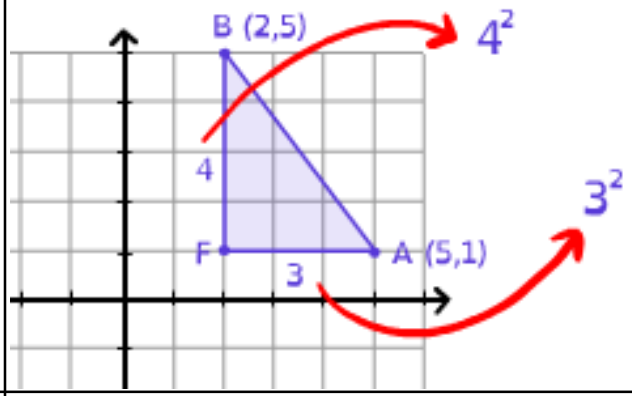
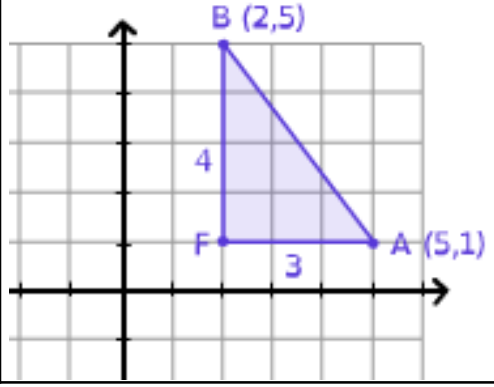
45		**take the y-distance of A**
46		**and subtract**

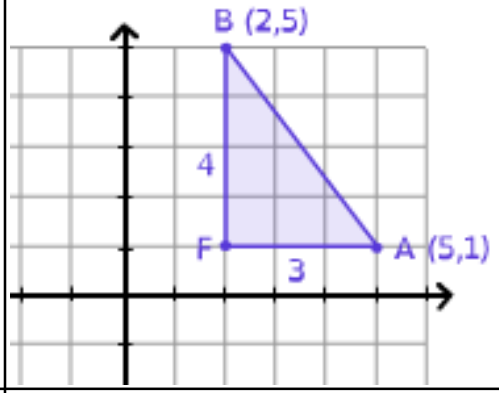
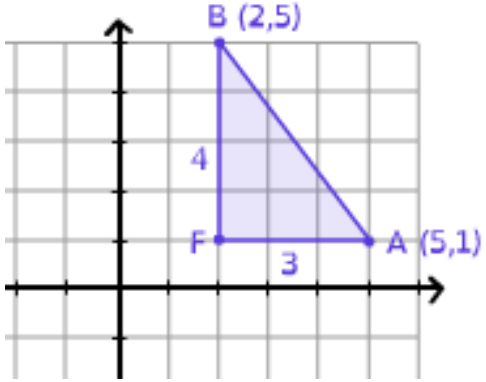
47		**the y-distance**
48		**of B.**

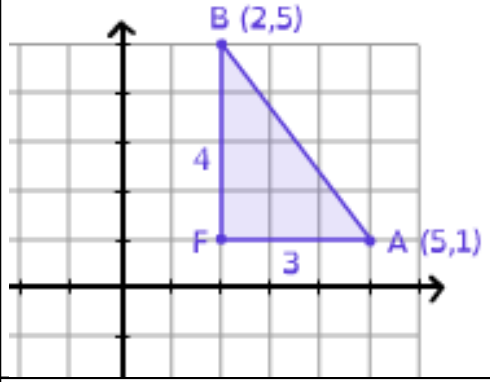
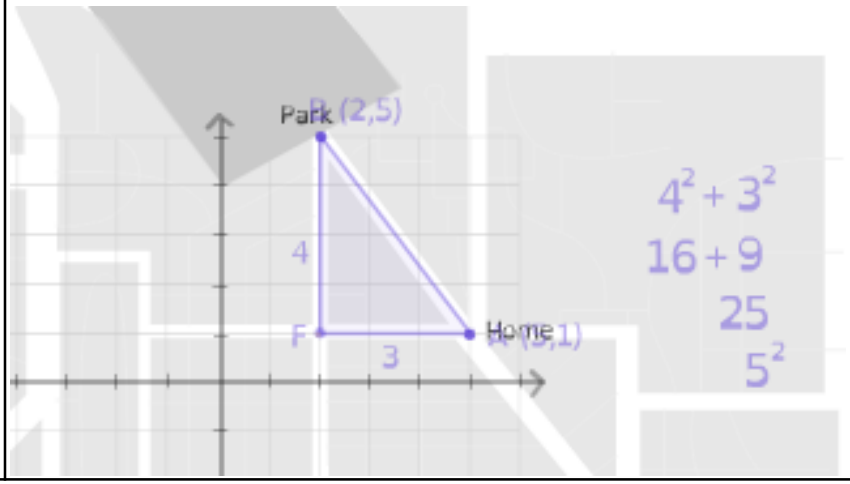
49		
50		**This is equivalent to**

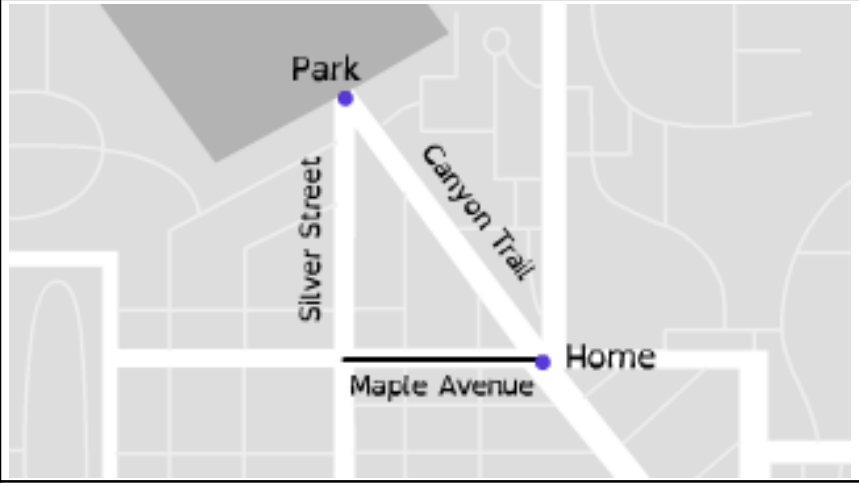
51	 5 - 1	**subtracting the y-coordinates**
52	 5 - 1 = 4	**of A and B.**

53		
54		**Now**

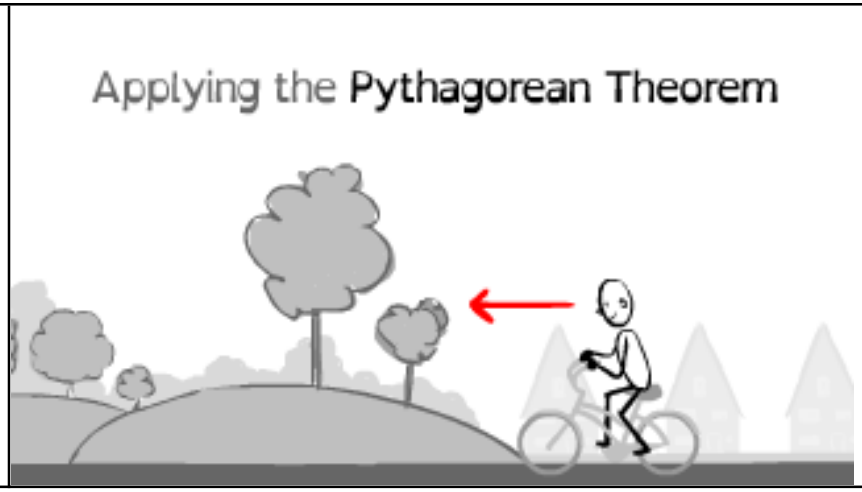
55		**apply the**
56	 $4^2 + 3^2$	**Pythagorean Theorem.**

57	 $4^2 + 3^2$ $16 + 9$	
58	 $4^2 + 3^2$ $16 + 9$ 25	

59	 $4^2 + 3^2$ $16 + 9$ 25 5^2	**Again, the length of Canyon Trail is five miles.**
60	 $4^2 + 3^2$ $16 + 9$ 25 5^2	**If**

61		**you can**
62		**represent a**

63		**problem using**
64		**a right triangle,**

65		**the Pythagorean Theorem can help you find several distances at once.**