

Segments, Distance & Midpoint

Hw 1.2 Part 2

THE ONE WITH THE NAIL SALON

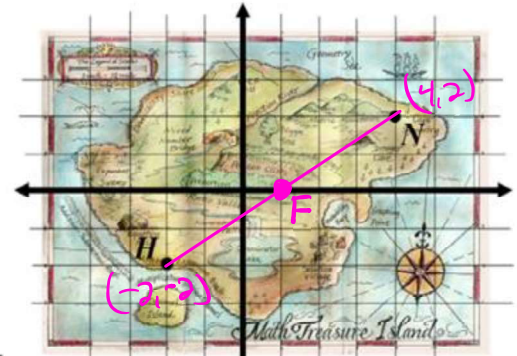
Since Mr. Kelly gets lost so easily he decides to lay a coordinate system over the map to help him navigate. Point H is Mr. Kelly's house and point N is where Mr. Kelly's favorite nail salon where he gets his manicures and pedicures.

- a. Find the distance between Mr. Kelly's house and his nail salon.

$$d = \sqrt{(\Delta x)^2 + (\Delta y)^2} = \sqrt{(-2) - (4)^2 + (-2) - (0)^2} = \sqrt{(-4)^2 + (-2)^2} = \sqrt{16 + 4} = \sqrt{20} = 2\sqrt{5}$$

- b. Mr. Kelly always has time for a facial which is conveniently located in the exact middle between his house and his nail salon. Find the coordinates of his facial and label it on the graph point F .

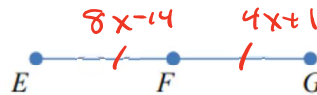
I counted the middle.



THE ONE WITH THE TWO COLUMNS

Label the picture and fill in the missing reasons in the two column proof.

Given: F is the midpoint of \overline{EG}
 $EF = 8x - 14$
 $FG = 4x + 1$



Prove: $x = \frac{15}{4}$

Some possible reasons:

- Given
- Addition Property of Equality
- Subtraction Property of Equality
- Multiplication Property of Equality
- Division Property of Equality
- Substitution
- Distributive Property
- Combine like terms
- Definition of _____
- _____ Postulate
- _____ Theorem

Statement	Reason
1. F is the midpoint of \overline{EG} $EF = 8x - 14$ $EG = 4x + 1$	Given
2. $EF = FG$	Def'n of MIDPOINT
3. $8x - 14 = 4x + 1$	Substitution Property of equality
4. $4x - 14 = 1$	Subtraction Property of equality
5. $4x = 15$	Addition Property of equality
6. $x = \frac{15}{4}$	Division Property of equality