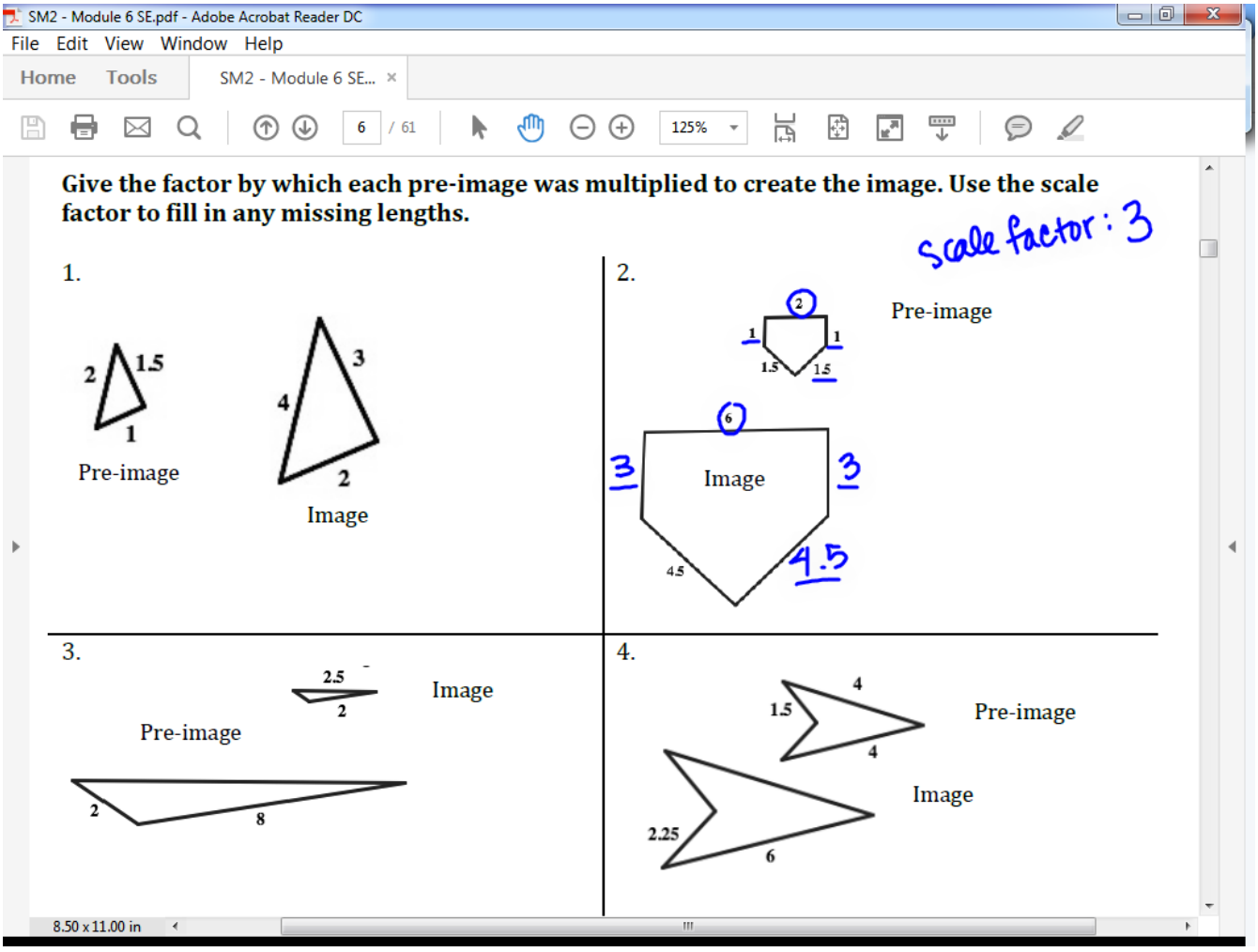
Questions on 6.1 HW?

Apr 8-8:30 AM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Give the factor by which each pre-image was multiplied to create the image. Use the scale factor to fill in any missing lengths.
scale factor: 3
1.
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Pre-image
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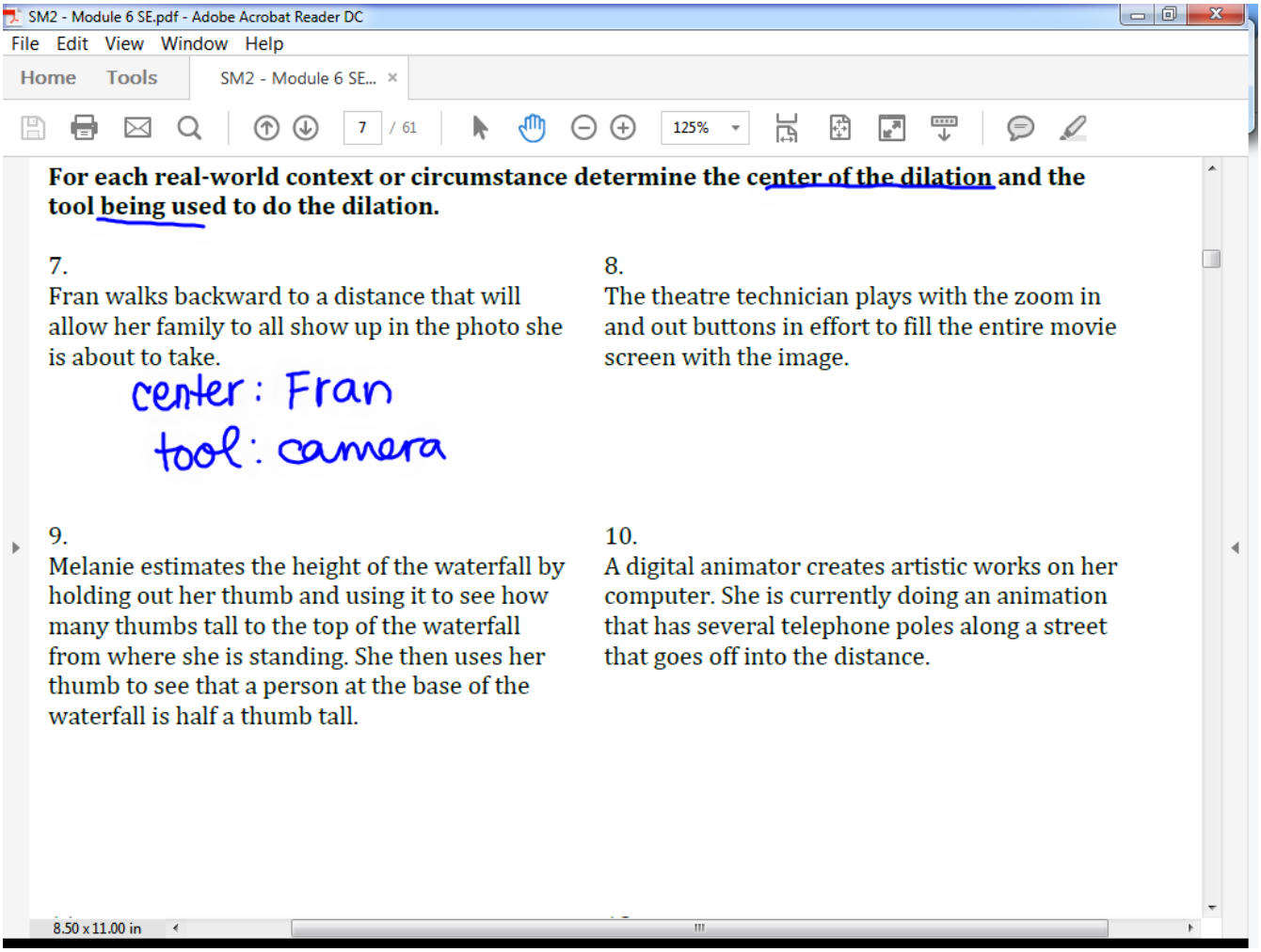

Feb 21-11:44 AM

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Determine whether the given representation is representative of a linear, exponential or quadratic function, classify as such and justify your reasoning.

13. X^2

2nd diff constant +/-

X	Y
2	7
3	12
4	19
5	28

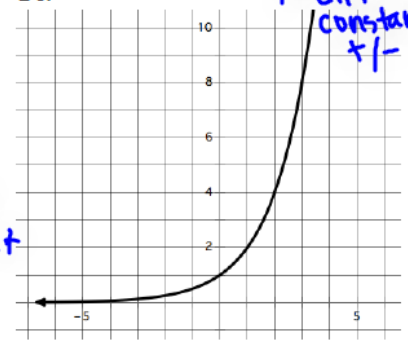
+5, +7, +9 → +2, +2

Type of function: Quadratic

Justification: 2nd diff constant (+2)

2nd diff constant +2

14.



X 1st diff constant +/-

□^x 1st diff. constant • / ÷

Type of function:

Justification:

15. $y = 3x^2 + 3x$

Type of function:

Justification:

16. $y = 7x - 10$

Type of function:

Justification:

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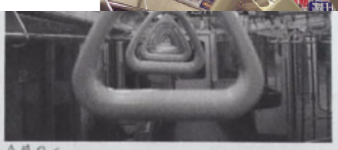
6.2 Triangle Dilations

A Solidify Understanding Task

1. Given ΔABC, use point M as the center of a dilation to locate the vertices of a triangle that has side lengths that are three times longer than the sides of ΔABC.

$\Delta A'B'C'$ has side lengths 3x as long as ΔABC

2. Now use point N as the center of a dilation to locate the vertices of a triangle that has side lengths that are one-half the length of the sides of ΔABC.

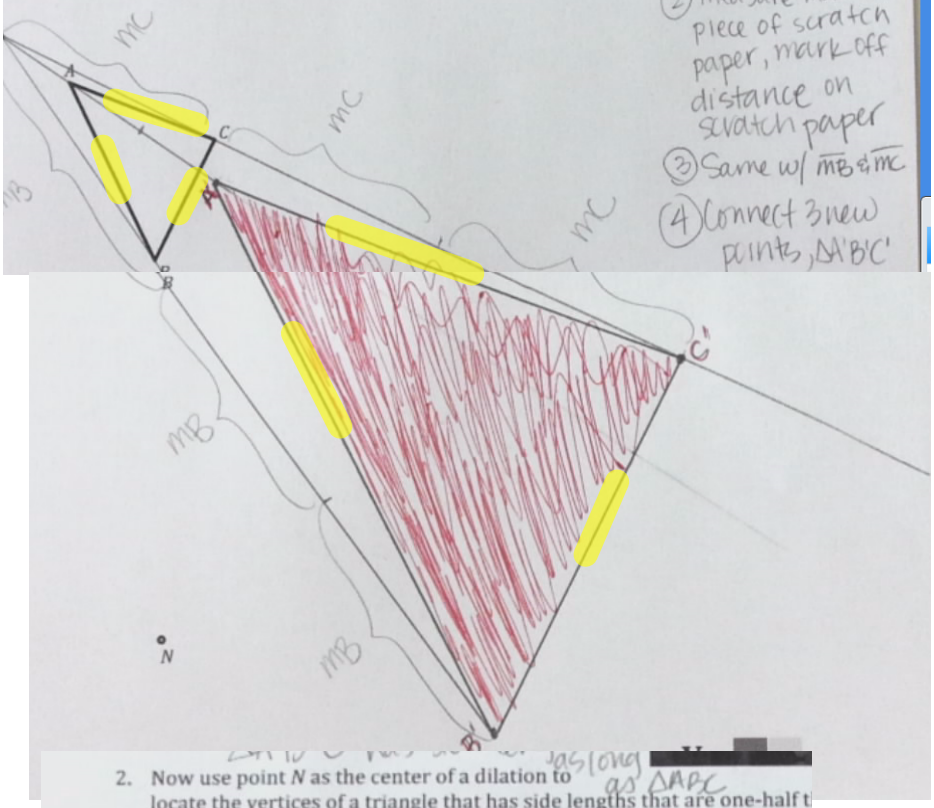


① Drawing $\overrightarrow{MA}$, $\overrightarrow{MB}$, $\overrightarrow{MC}$

② Measure MA with piece of scratch paper, mark off distance on scratch paper

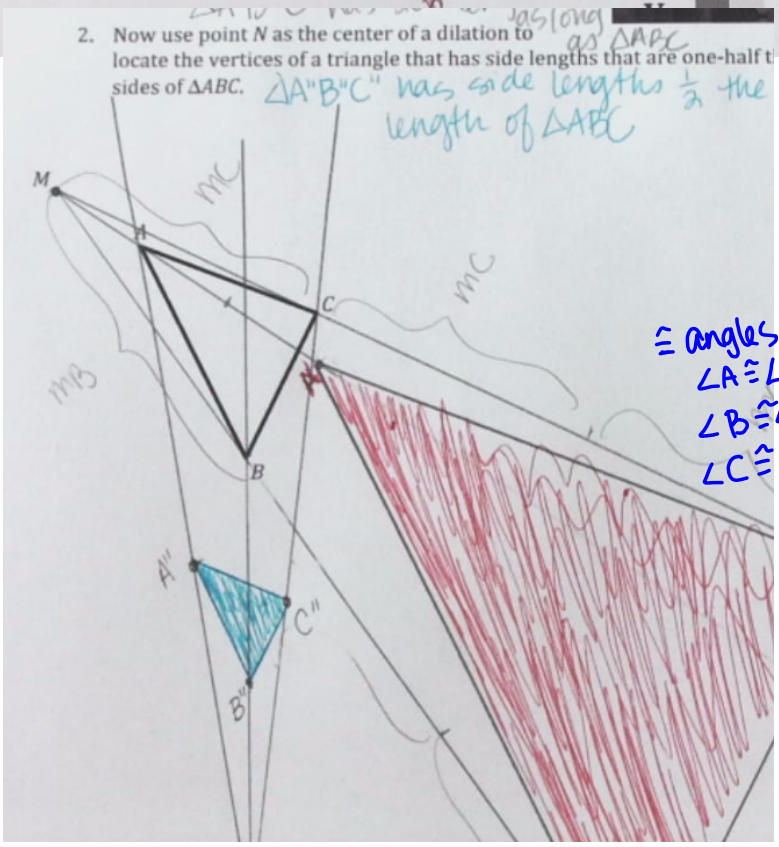
③ Same w/ $\overline{MB}$ & $\overline{MC}$

④ Connect 3 new points, $\Delta A'B'C'$



2. Now use point N as the center of a dilation to locate the vertices of a triangle that has side lengths that are one-half t sides of ΔABC.

$\Delta A''B''C''$ has side lengths $\frac{1}{2}$ the length of ΔABC



≅ angles:
$\angle A \cong \angle A' \cong \angle A''$
$\angle B \cong \angle B' \cong \angle B''$
$\angle C \cong \angle C' \cong \angle C''$

Feb 15-1:29 PM

3. Label the vertices in the two triangles you created in the diagram above. Based on this diagram, write several proportionality statements you believe are true. First write your proportionality statements using the names of the sides of the triangles in your ratios. Then verify that the proportions are true by replacing the side names with their measurements, measured to the nearest millimeter.

My list of proportions: (try to find at least 10 proportionality statements you believe are true)

$\triangle ABC \sim \triangle A'B'C' \sim \triangle A''B''C''$

$\frac{4}{12} \rightarrow \frac{AB}{A'B'} = \frac{BC}{B'C'} = \frac{AC}{A'C'}$

AB = 4, A'B' = 12; BC = 2.8, B'C' = 8.1ish; AC = 3.3, A'C' = 9.6ish

$\frac{1}{3}$

0.333... 0.345679 0.34375

close enough to show =

$\frac{AB}{A''B''} = \frac{BC}{B''C''} = \frac{AC}{A''C''}$

$\frac{A'B'}{A''B''} = \frac{B'C'}{B''C''}$ same △ / same △

corresponding side length

$\frac{A'B'}{B'C'} = \frac{A''B''}{B''C''}$

corresponding side lengths

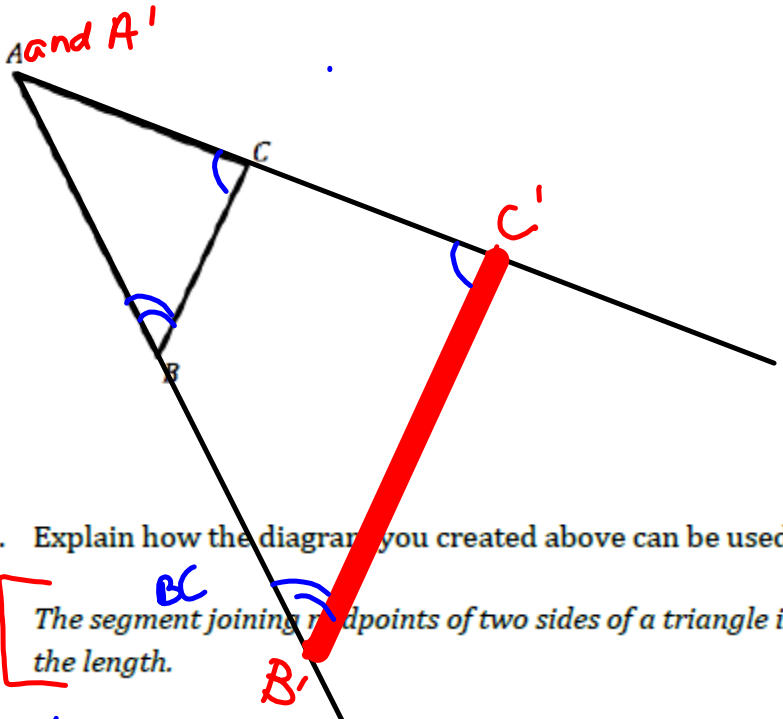
same △

4. Based on your work above, under what conditions are the corresponding line segments in an image and its pre-image parallel after a dilation? That is, which word best completes this statement?

After a dilation, corresponding line segments in an image and its pre-image are [never, sometimes, always] parallel.

5. Give reasons for your answer. If you choose "sometimes", be very clear in your explanation how to tell when the corresponding line segments before and after the dilation are parallel and when they are not.

Given ΔABC, use point A as the center of a dilation to locate the vertices of a triangle that has side lengths that are twice as long as the sides of ΔABC.



$\overline{BC} \parallel \overline{B'C'}$
and $BC = \frac{1}{2}B'C'$

6. Explain how the diagram you created above can be used to prove the following theorem:

The segment joining midpoints of two sides of a triangle is parallel to the third side and half the length.

BC

Yes! $\overline{BC} \parallel \overline{B'C'}$ because we have corresponding angles that are congruent, and BC is $\frac{1}{2}$ the length of B'C'.

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Homework

Finish 6.2 "Ready, Set, Go"

Mar 28-9:36 AM