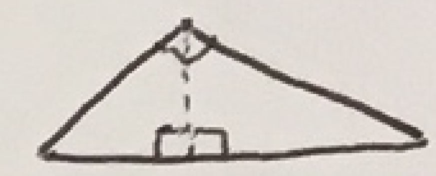
a) 125

UNIT 5 Similar Triangles REVIEW DAY 1

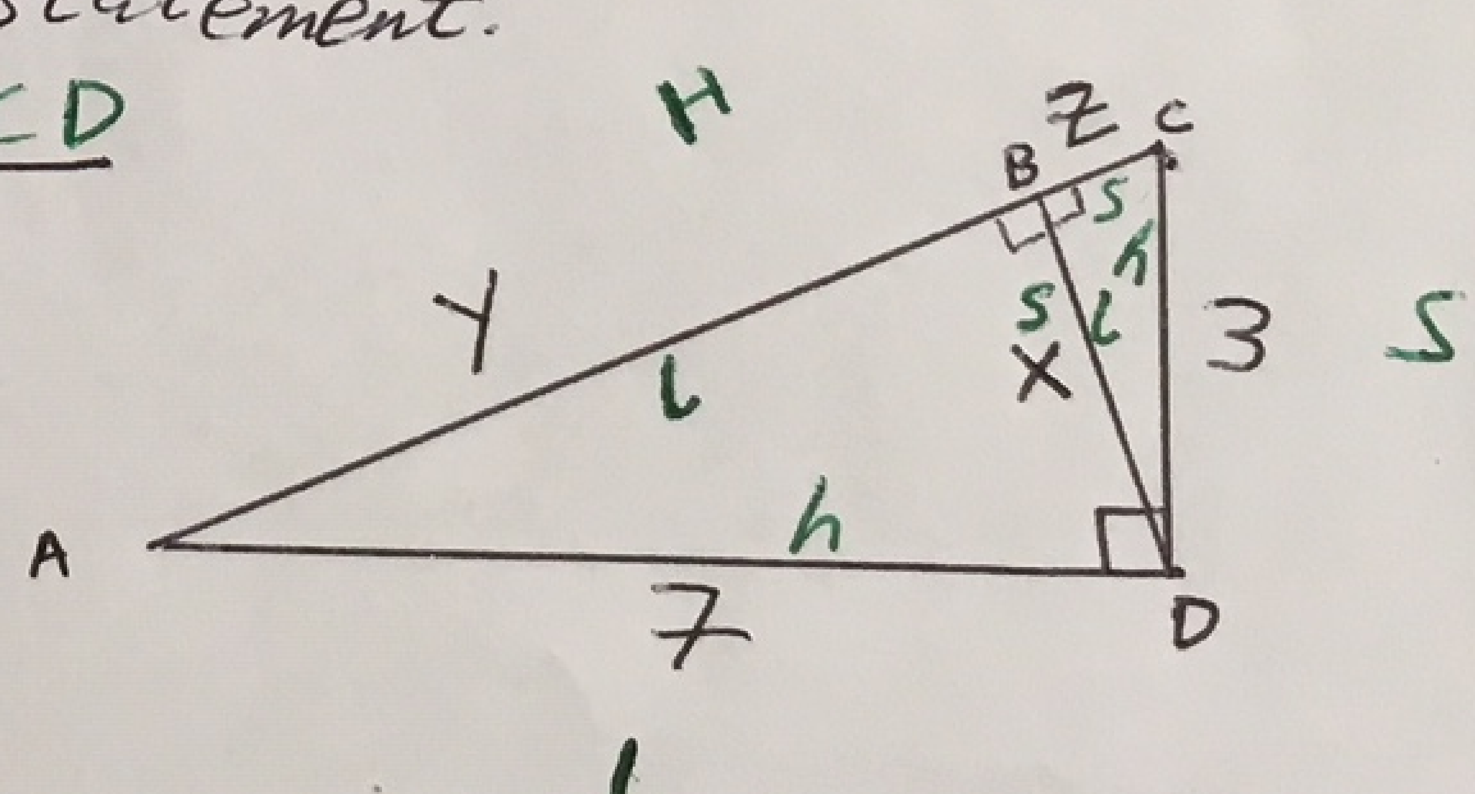
1.) How do we know if two figures are similar?
- Similarity transformations
- By AA, SSS and SAS, (The sides are proportional)

2.) What definitions, properties and theorems can we use to prove triangle similarity theorems?
- Parallel Lines
- Altitude to the hypotenuse: 
- Proportionality

3.) How do we use similarity to solve problems?
- We can use congruence and similarity criteria for triangles to solve unknown sides and angles.
- Examples would be indirect measurements of skyscrapers, which you can't measure with yard-sticks!

4.) a) Write the similarity statement.

$\triangle ACD \sim \triangle ABD \sim \triangle BCD$



b) What is the length of $\overline{AC}$?

$3^2 + 7^2 = \overline{AC}^2$

$9 + 49 = \overline{AC}^2$

$58 = \overline{AC}^2$

$\sqrt{58} = \overline{AC}$

$7.6 = \overline{AC}$

c) What is the length of $\overline{AB}$?

$\triangle$ middle   big $\triangle$

$\frac{L \rightarrow}{h \rightarrow} \quad \frac{y}{7} = \frac{7}{7.6} \quad \frac{\leftarrow L}{\leftarrow h}$

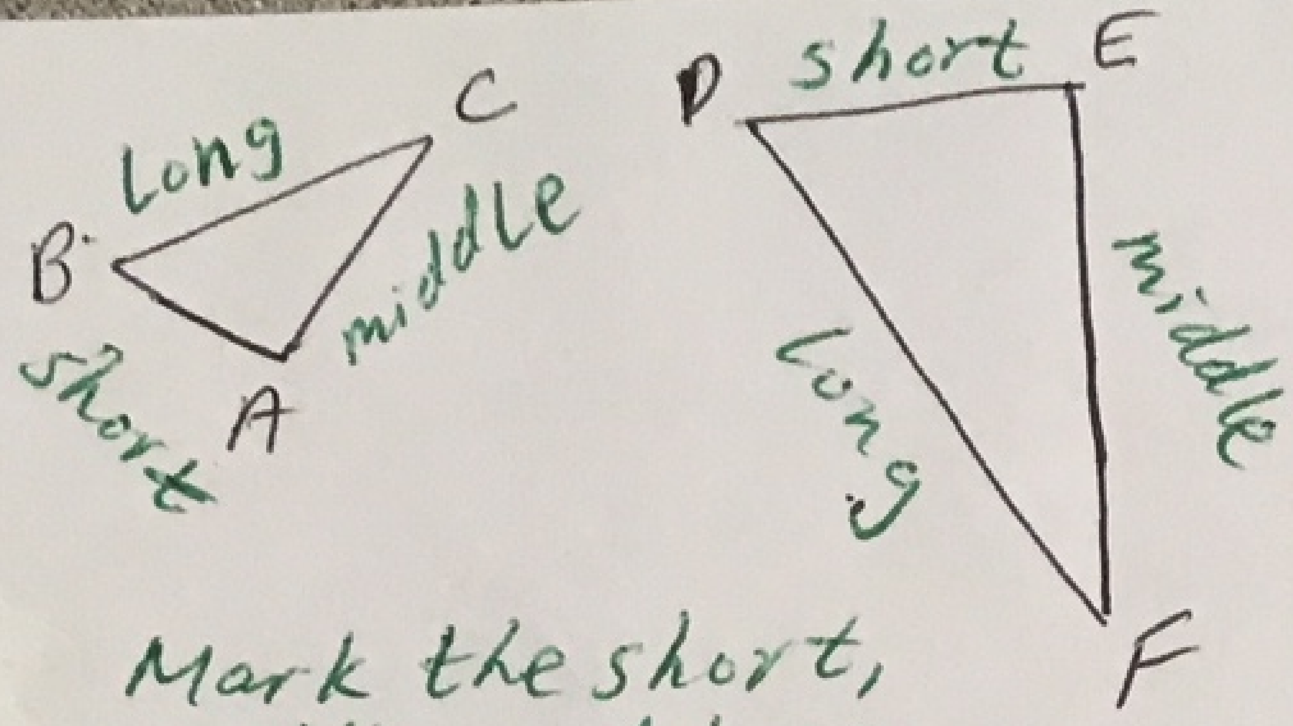
$7.6y = 49$

$y = 6.4$

d) What is the length of $\overline{BC}$? $7.6 - 6.4 = 1.2$

b) 125

5.)



$\triangle ABC \sim \triangle DEF$. Which of the following is true?

a) $\frac{AC}{AB} = \frac{EF}{DF}$

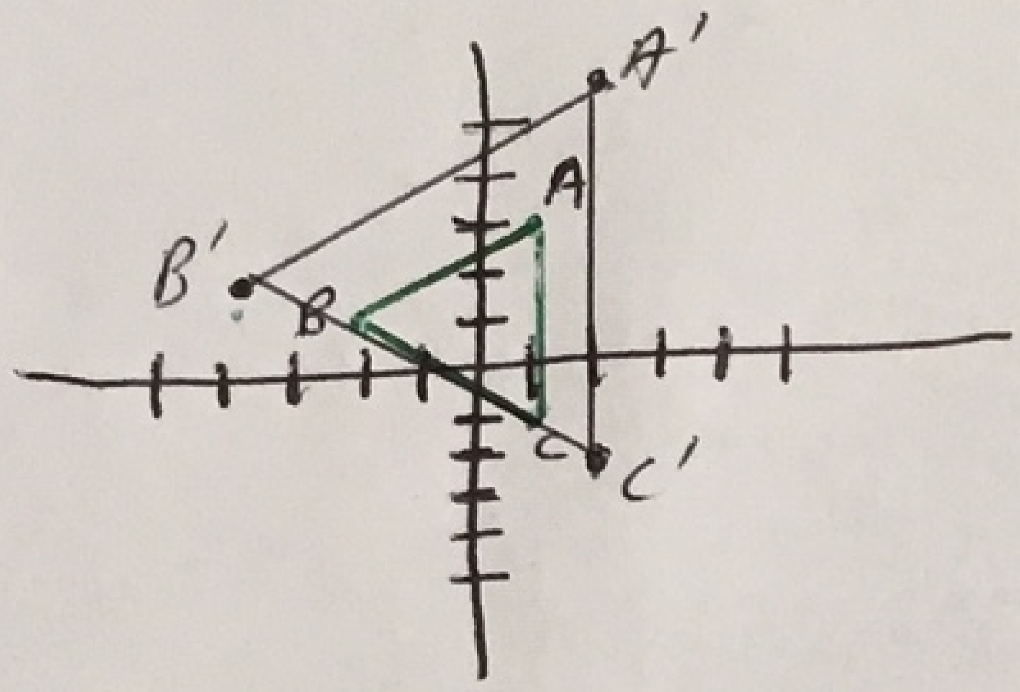
b) $\frac{AB}{DF} = \frac{DE}{BC}$

c) $\frac{AB}{DE} = \frac{AC}{DF}$

d) $\frac{AB}{EF} = \frac{DE}{BC}$

Mark the short, middle and Long.

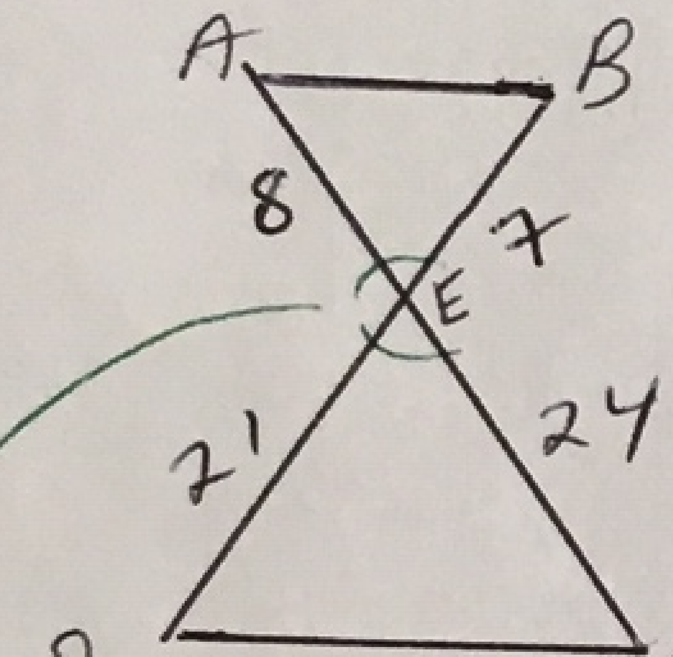
6.) What is the scale factor? Mark the points!



A(1,3) A'(2,6)
B(-2,1) B'(-4,2)
C(1,-1) C'(2,-2)

You can tell that A', B' and C' prime doubled so the dilation is $\underline{\underline{2}}$

7.)



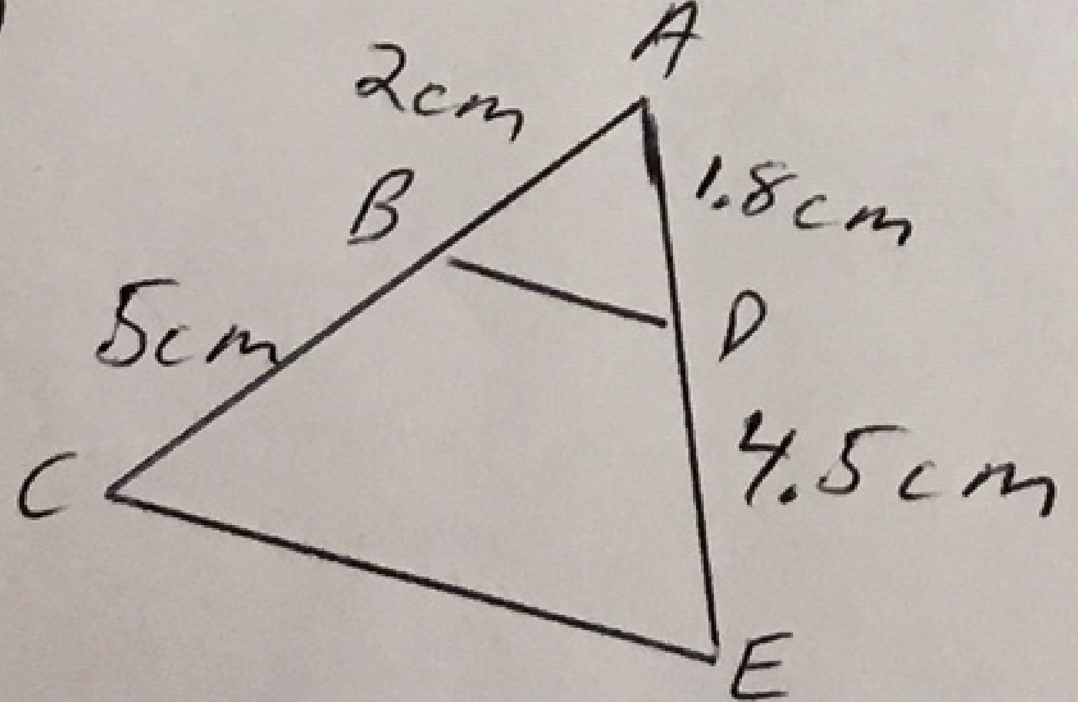
Are the triangles similar? If yes, why? If yes, write the similarity statement.

$\frac{7}{21} = \frac{1}{3}$ and $\frac{8}{24} = \frac{1}{3}$ so corresponding sides are proportional

Mark these vertical angles as congruent.

Thus $\triangle ABE \sim \triangle CDE$ by SAS

8.)



a) Is $\overline{BD} \parallel \overline{CE}$? Explain why?

$\frac{2}{5} = 0.4$ and $\frac{1.8}{4.5} = 0.4$

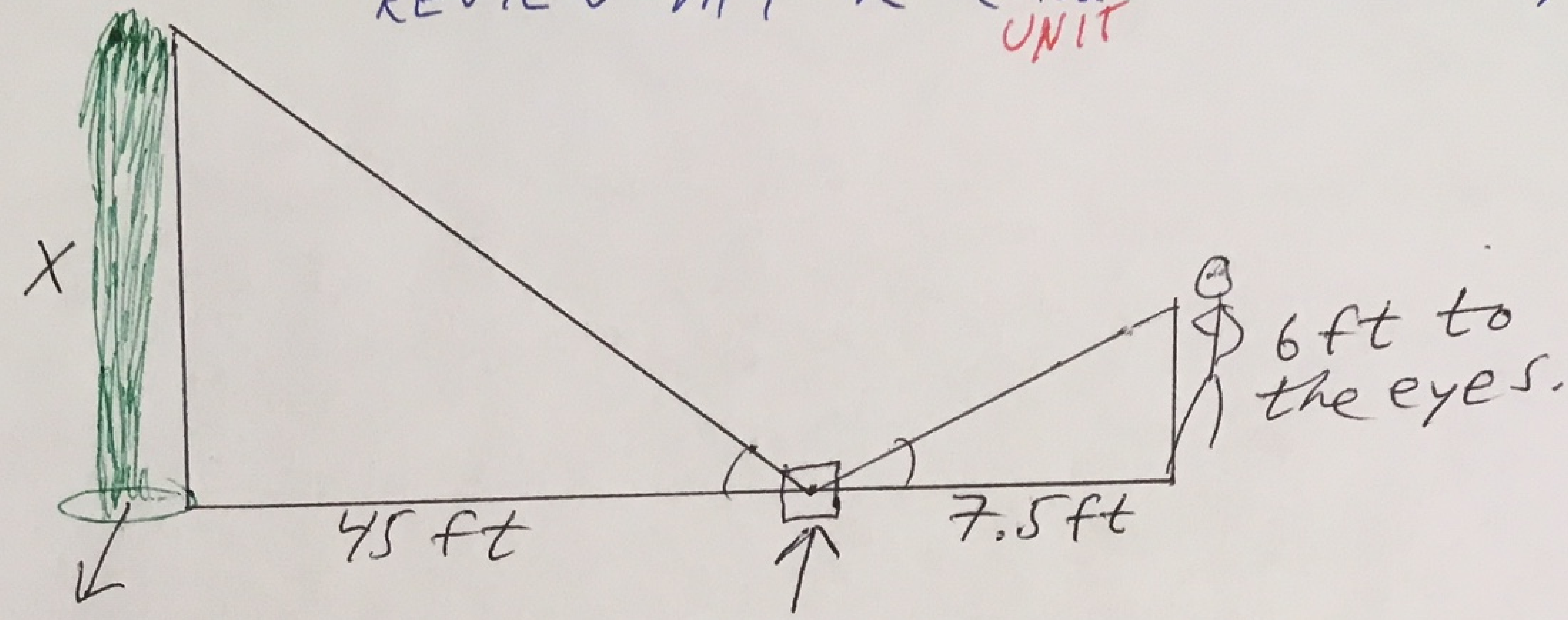
so by the Triangle Proportionality Converse $\overline{BD} \parallel \overline{CE}$.

b) What is the length of BD if CE = 6.5cm?

$\frac{7}{6.5} = \frac{2}{BD} \rightarrow 7BD = 13 \rightarrow BD = 1.86$

REVIEW DAY 2 (~~Mod~~ UNIT 5 Similar $\triangle$s) 9/26

9.)



Geyser in a national park.

How high is it?

$$\frac{6}{7.5} = \frac{X}{45}$$ cross-multiply

$7.5X = 270$ divide by 7.5

$X = 36$ ft

10.)

How tall is the tree?

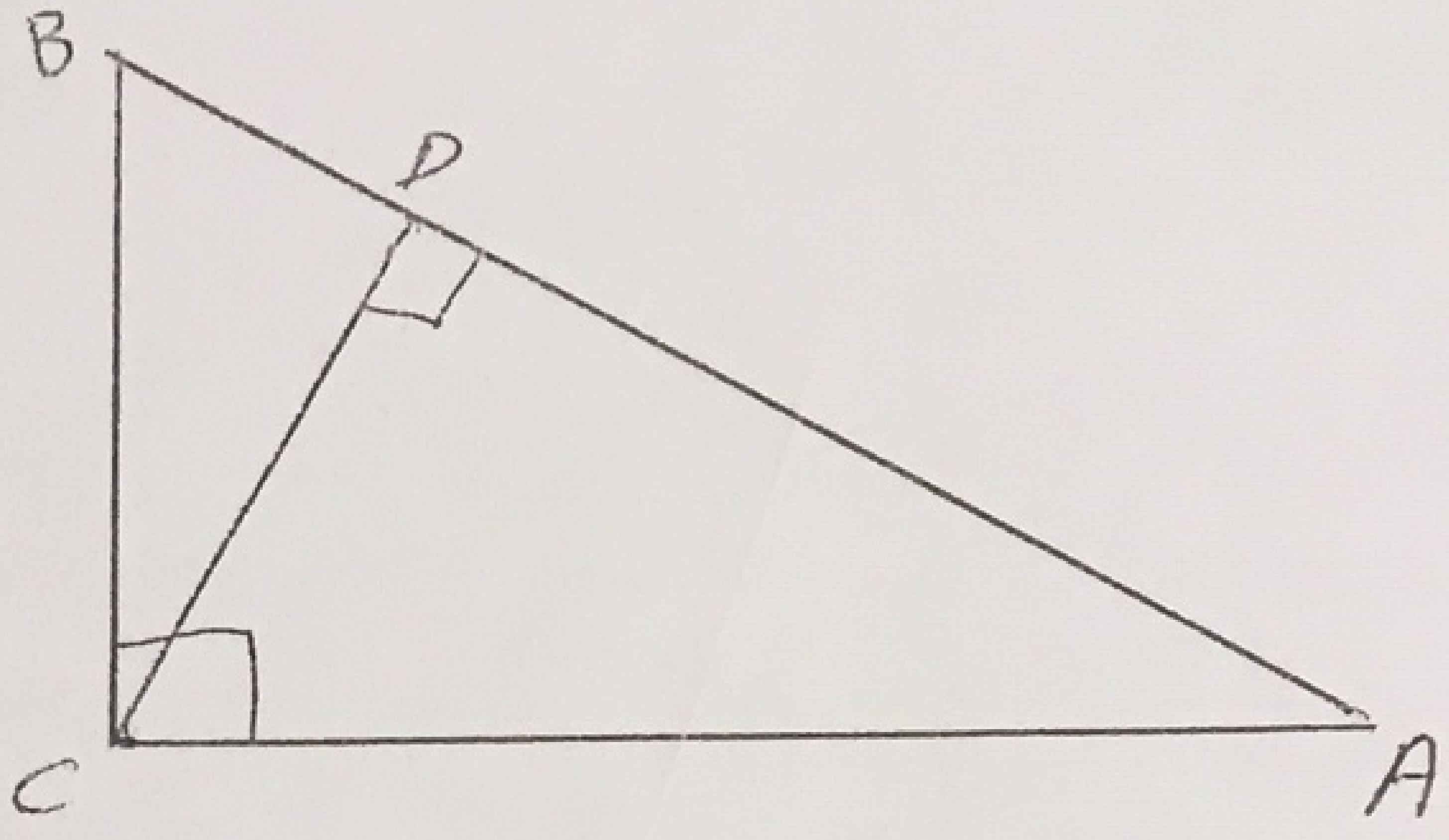
$$\frac{6}{3} = \frac{X}{12}$$

$3X = 72$ divide by 3

$X = 24$

d) 126

11.) Given $\measuredangle BCA$ & $\measuredangle CDA$ & $\measuredangle BDC$ are right angles.
Prove that $\triangle BCA \sim \triangle CDA \sim \triangle BDC$



Statements	Reasons
1.	1. Given
2.	2. Right angle congruence
3. $\measuredangle A \cong \measuredangle A$	3.
4. $\triangle BC\underline{A} \sim \triangle CD\underline{A}$	4.
5. $\measuredangle B \cong \measuredangle B$	5.
6.	6. AA Triangle Similarity
7. $\triangle BCA \sim \triangle CDA \sim \triangle BDC$	7.

1. $\measuredangle BCA$ & $\measuredangle CDA$ & $\measuredangle BDC$ are right angles. 2. $\measuredangle BCA \cong \measuredangle CDA \cong \measuredangle BDC$ 6. $\triangle \underline{B}CA \sim \triangle \underline{B}DC$	3. Reflexive Property 4. AA Triangle Similarity 5. Refl. Prop. 6. AA Triangle Sim. 7. Transitive Property