7.10

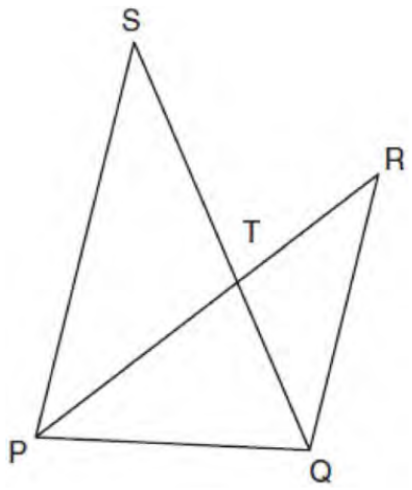
Name (print first and last) _____ **Per**_____ **Date:** 3/14 due 3/18

7.10 Similarity: Mean Proportion of Right Triangles **Geometry Regents 2013-2014 Ms. Lomac**

SLO: I can solve similarity problems with overlapping right triangles.

Use the check boxes and blanks to show your process for figuring out each problem. SOME boxes will not be checked and SOME blanks will not be completed. You MUST show work and describe what you learned for each problem.

453 In the diagram below, $\overline{SQ}$ and $\overline{PR}$ intersect at T, $\overline{PQ}$ is drawn, and $\overline{PS} \parallel \overline{QR}$.



What technique can be used to prove that $\Delta PST \sim \Delta RQT$?

1 SAS
2 SSS
3 ASA
4 AA

☐ I got help from:
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- ☐ Peer assistant name _____
- ☐ Teacher
- ☐ I figured this out myself
- ☐ Other _____

☐ I showed work AND described how I will remember this for the test in the space below.

454 In ΔABC and ΔDEF, $\frac{AC}{DF} = \frac{CB}{FE}$. Which additional information would prove $\Delta ABC \sim \Delta DEF$?

1 $AC = DF$
2 $CB = FE$
3 $\angle ACB \cong \angle DFE$
4 $\angle BAC \cong \angle EDF$

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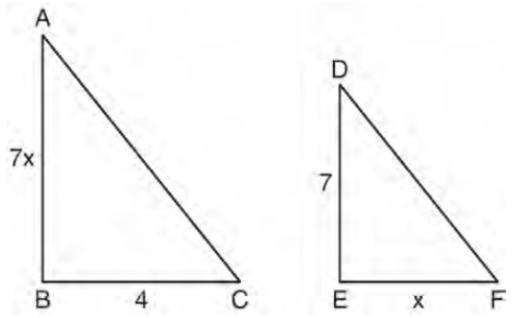
7.11

358 As shown in the diagram below, $\Delta ABC \sim \Delta DEF$, $AB = 7x$, $BC = 4$, $DE = 7$, and $EF = x$.



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

1 28
2 2
3 14
4 4

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355 Scalene triangle ABC is similar to triangle DEF. Which statement is *false*?

1 $AB:BC=DE:EF$
2 $AC:DF=BC:EF$
3 $\angle ACB \cong \angle DFE$
4 $\angle ABC \cong \angle EDF$

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353 ΔABC is similar to ΔDEF. The ratio of the length of $\overline{AB}$ to the length of $\overline{DE}$ is 3:1. Which ratio is also equal to 3:1?

1 $\frac{m\angle A}{m\angle D}$

2 $\frac{m\angle B}{m\angle F}$

3 $\frac{\text{area of } \Delta ABC}{\text{area of } \Delta DEF}$

4 $\frac{\text{perimeter of } \Delta ABC}{\text{perimeter of } \Delta DEF}$

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364 In ΔPQR, $\angle PRQ$ is a right angle and $\overline{RT}$ is drawn perpendicular to hypotenuse $\overline{PQ}$. If $PT = x$, $RT = 6$, and $TQ = 4x$, what is the length of $\overline{PQ}$?

1 9
2 12
3 3
4 15

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357 If $\Delta ABC \sim \Delta ZXY$, $m\angle A = 50$, and $m\angle C = 30$, what is $m\angle X$?

1 30
2 50
3 80
4 100

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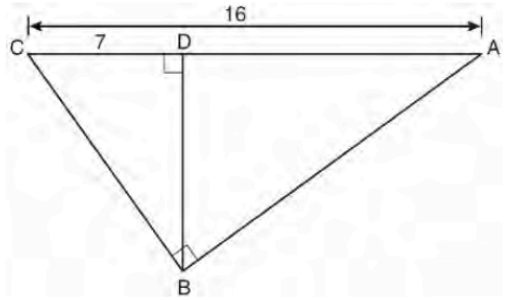
363 In the diagram below of right triangle ABC, altitude $\overline{BD}$ is drawn to hypotenuse $\overline{AC}$, $AC = 16$, and $CD = 7$.



What is the length of $\overline{BD}$?

1 $3\sqrt{7}$
2 $4\sqrt{7}$
3 $7\sqrt{3}$
4 12

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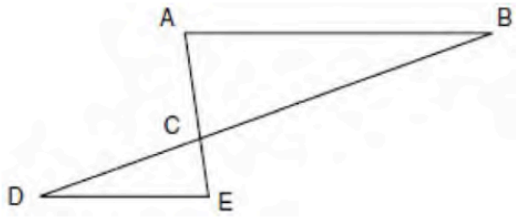
452 In the diagram of ΔABC and ΔEDC below, $\overline{AE}$ and $\overline{BD}$ intersect at C, and $\angle CAB \cong \angle CED$.



Which method can be used to show that ΔABC must be similar to ΔEDC?

1 SAS
2 AA
3 SSS
4 HL

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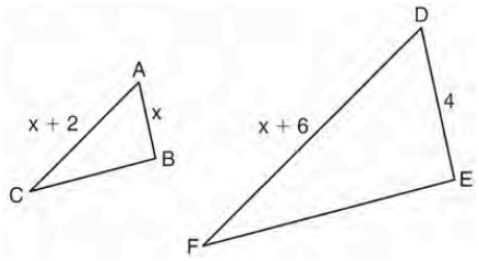
359 In the diagram below, $\Delta ABC \sim \Delta DEF$, $DE = 4$, $AB = x$, $AC = x + 2$, and $DF = x + 6$. Determine the length of $\overline{AB}$. [Only an algebraic solution can receive full credit.]



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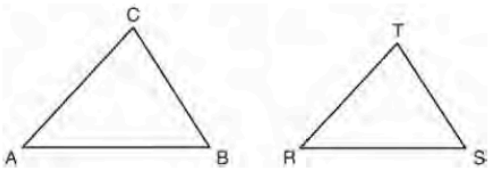
354 In the diagram below, $\Delta ABC \sim \Delta RST$.



Which statement is *not* true?

1 $\angle A \cong \angle R$

2 $\frac{AB}{RS} = \frac{BC}{ST}$

3 $\frac{AB}{BC} = \frac{ST}{RS}$

4 $\frac{AB + BC + AC}{RS + ST + RT} = \frac{AB}{RS}$

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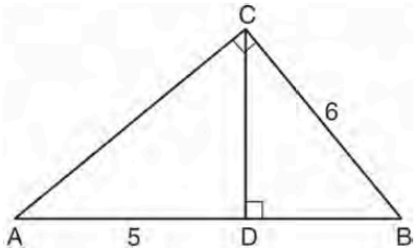
362 In the diagram below of right triangle ABC, $\overline{CD}$ is the altitude to hypotenuse $\overline{AB}$, $CB = 6$, and $AD = 5$.



What is the length of $\overline{BD}$?

1 5
2 9
3 3
4 4

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