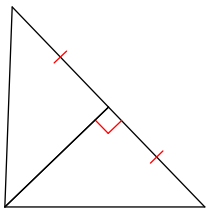
Kuta Software - Infinite Geometry Name_____

Right Triangle Congruence

Date_____ Period____

State if the two triangles are congruent. If they are, state how you know.

1)



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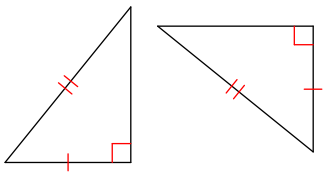

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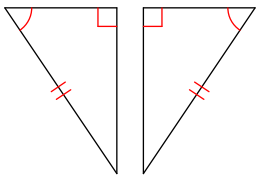

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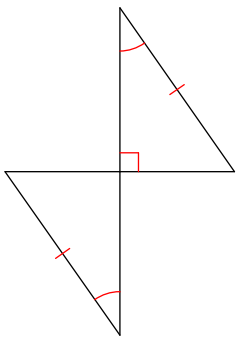

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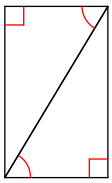

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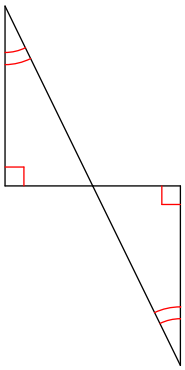

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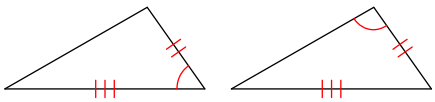

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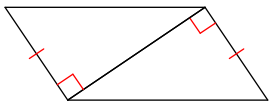

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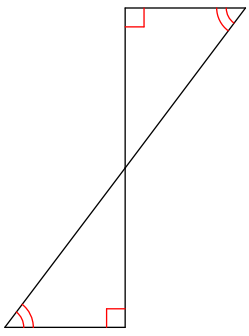

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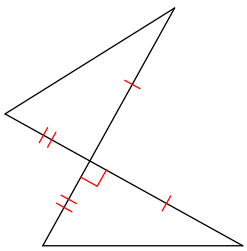
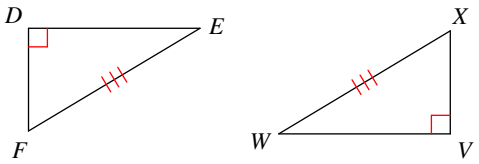
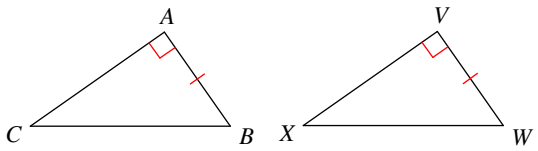


State what additional information is required in order to know that the triangles are congruent for the reason given.

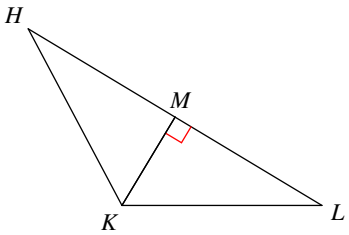
11) HL



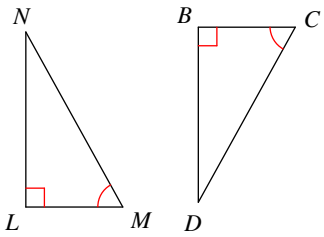
12) LL



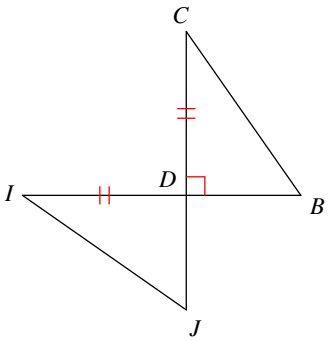
13) LL



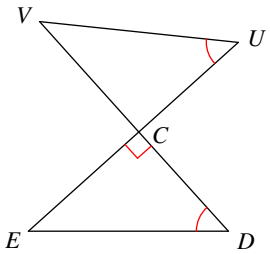
14) HA



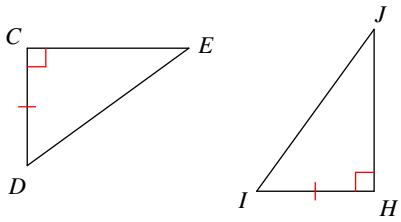
15) LA



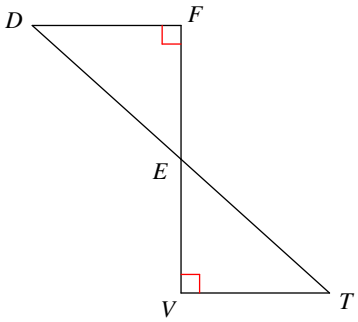
16) HA



17) HL

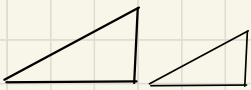


18) LA

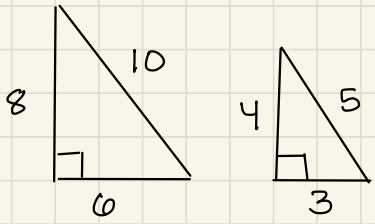


SIMILAR (~) MEANS: _____

ALL ANGLES ARE _____

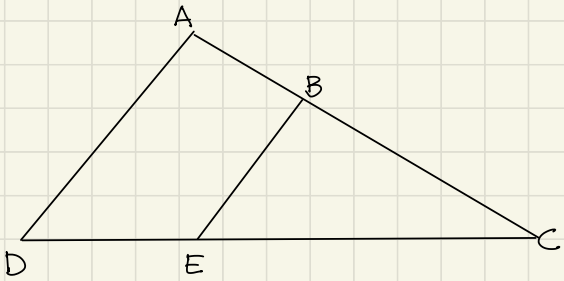


THE RATIO OF EACH SIDES ARE _____



$AREA_{\Delta 1}$ = _____ $AREA_{\Delta 2}$ = _____

A.A - Postulate - If two angles of one triangle are congruent to 2 angles of another triangle, and none of their legs are congruent, then the two triangles are similar.

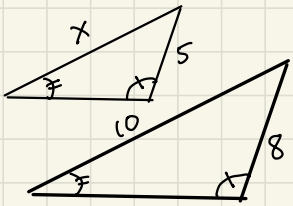


STATEMENTS	REASONS

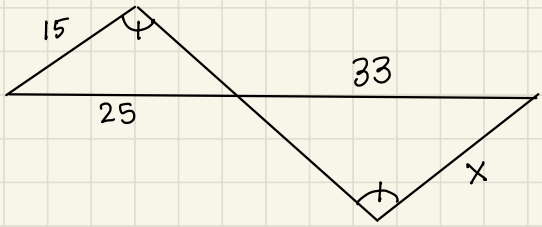
GIVEN: $\angle DAB \cong \angle EBC$

PROVE: $\triangle DAC \sim \triangle EBC$

LOOK FOR THE REFLEXIVE PROPERTY IN AA

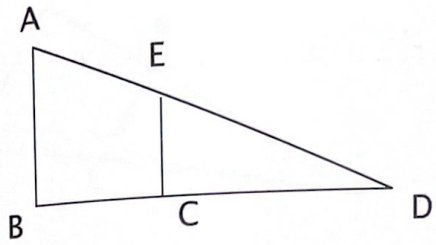


USING CORRESPONDING PARTS OF SIMILAR TRIANGLES ARE PROPORTIONAL.



LESSON PRACTICE

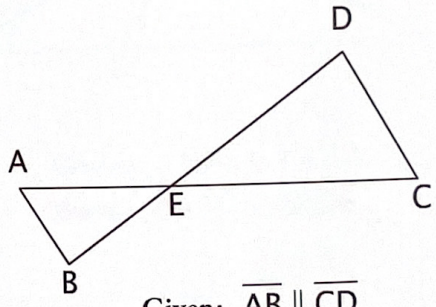
Complete the following proofs using AA similarity.



Given: $\overline{AB} \perp \overline{BD}$
$\overline{EC} \perp \overline{BD}$

Prove: $\Delta ABD \sim \Delta ECD$

STATEMENTS	REASONS
1. _____	given
2. _____	given
3. ___ ≅ ___	4. _____
5. ___ ≅ ___	6. _____
7. ___ ~ ___	8. _____



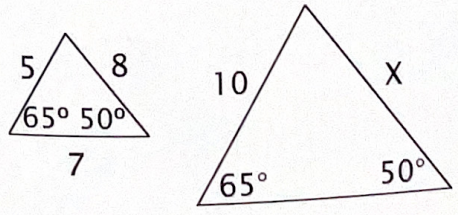
Given: $\overline{AB} \parallel \overline{CD}$

Prove: $\Delta ABE \sim \Delta CDE$

STATEMENTS	REASONS
9. _____	given
10. ___ ≅ ___	11. _____
12. ___ ≅ ___	13. _____
14. ___ ~ ___	15. _____

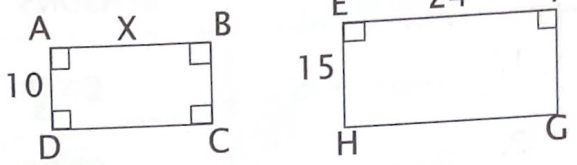
Find X using "corresponding parts of similar figures are proportional."

16.



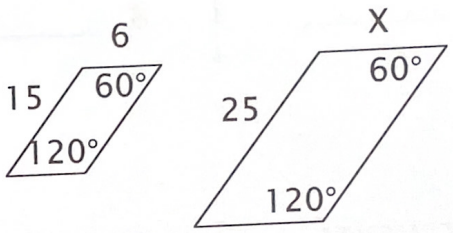
Find X using "corresponding parts of similar figures are proportional."

17.

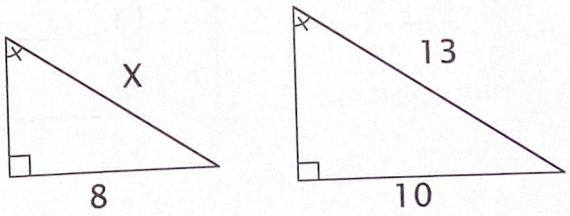


Rectangle ABCD is similar to rectangle EFGH.

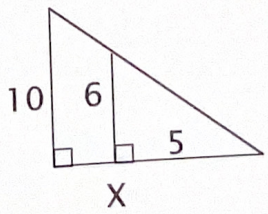
18.



19.



20.



X is total base of the larger triangle.

LESSON PRACTICE

Factor completely.

1. $X^4 - 9X^2 =$

2. $3X^3 - 75X =$

3. $4X^4 - 4X^2 =$

4. $5X^5 - 5X =$

5. $-2X^2 - 16X - 30 =$

6. $3X^3 + 9X^2 - 30X =$

7. $5X^3 - 5X^2 - 30X =$

8. $X^3 + 11X^2 + 30X =$

9. $-4X^2 - 28X - 40 =$

10. $-3X^3 - 24X^2 - 36X =$

11. $2X^3 - 8X^2 - 10X =$

12. $5X^5 - X^4 - 6X^3 =$

13. $-3X^3 - 12X^2 + 36X =$

14. $X^4 + 3X^3 - 4X^2 =$

15. $4X^3 - 36X =$

16. $2X^4 - 32X^2 =$

Find the factors.

1. $X^4 - 16$

2. Check #1 by substituting 10 for X.

3. $16X^2 - 9$

4. Check #3 by substituting 10 for X.

Find the missing factor.

5. $X + 2 \overline{)\ 3X^2 - 2X - 9}$

6. Check #5 by multiplication.

Build and find the product.

7. $(X - 3)(X - 4) =$

8. Check #7 by multiplying the binomials vertically.

Solve using oriental squares.

9. $75^2 =$

10.
$$\begin{array}{r} 41 \\ \times\ 49 \\ \hline \end{array}$$

11. Find the factors and check: $2X^2 + 4X + 2$.

12. Find the factors and check: $6X^2 - 600$.

Solve for the unknown.

13. $\frac{3}{7} = \frac{6}{Q} = (Q \neq 0)$

14. $\frac{2}{9} = \frac{X}{36}$

15. $.015 = .25Q - .44$

16. $-4X - 16 = -5X + 43$

17. Express 49,703 with exponential notation.

18. Write as a decimal number: $1 \times 10^{-2} + 5 \times 10^{-4}$

19. Find three consecutive integers such that 12 times the second, plus 4 times the first, equals 9 times the third, plus 8.

20. $(2X + 3)(A + 4) = (2X)(\quad + \quad) + (3)(\quad + \quad) = (\quad + \quad) + (\quad + \quad)$

SYSTEMATIC REVIEW

Find the factors.

1. $X^3 - 9X$

2. Check #1 by substituting 10 for X.

3. $X^4 - 81$

4. Check #3 by substituting 10 for X.

Find the missing factor.

5. $X - 3 \overline{)\ 2X^2 - 7X - 8}$

6. Check #5 by multiplication.

Build and find the product.

7. $(X - 2)(X - 1) =$

8. Check #7 by multiplying the binomials vertically.

Solve using oriental squares.

9. $95^2 =$

10. $\begin{array}{r} 24 \\ \times\ 26 \\ \hline \end{array}$

11. Find the factors and check: $5X^2 - 45$.

12. Find the factors and check: $4X^2 - 324$

Solve for the unknown.

13. $\frac{4}{11} = \frac{P}{110}$

14. $\frac{5}{8} = \frac{C}{15}$

15. $-50BY + 30B = 80BY - 40B \ (B \neq 0)$

16. $2.07 - .9X = 5X + .83$

17. Justin has fourteen coins consisting of quarters and dimes. If the total value is $2.30, how many of each kind does he have?

18. If a race car driver travels at 180 mph for 4.2 hours, what is his distance?

19. If the driver in #18 decreases his rate by 30 mph, how long would it take to travel the same distance?

20. (+)(+) = ( )(+) + ( )(+) = (XC + XB) + (AC + AB)