Ch 6 Calendar		
Date	**Day**	**Assignment** (Due the next class meeting)
1/09/24 1/10/24	Tuesday (A) Wednesday (B)	Notes: 6.0 Proportions and Dilations *Take Baseline Assessment in class **HW: 6.0 Worksheet**
1/11/24 1/12/24	Thursday (A) Friday (B)	Notes: 6.1 Dilations and Scale Factor **HW: 6.1 Worksheet**
1/16/24 1/17/24	Tuesday (A) Wednesday (B)	Notes: 6.2 Day 1 Similar Figures **HW: 6.2 Day 1 Worksheet**
1/18/24 1/19/24	Thursday (A) Friday (B)	Notes: 6.2 Day 2 Similar Figures **HW: 6.2 Day 2 Worksheet**
1/22/24 1/23/24	Monday (A) Tuesday (B)	Notes: 6.3 Proving Similar Triangles **HW: 6.3 Worksheet**
1/24/24 1/25/24	Wednesday (A) Thursday (B)	Notes: 6.4 Proportional Parts **HW: 6.4 Worksheet**
1/26/24 1/29/24	Friday (A) Monday (B)	Notes: 6.5 Perimeter & Area of Similar Polygons **HW: 6.5 Worksheet**
1/30/24 1/31/24	Tuesday (A) Wednesday (B)	In class review for Ch 6 Test **HW: Ch 6 Rev Wk and Vocab Journal**
2/01/24 2/02/24	Thursday (A) Friday (B)	**Ch 6 Test** **HW: None** 😊

HW POLICY REMINDER (Copied from 23/24 syllabus)

Homework assignments will be graded on accuracy. Each problem is worth one point if done correctly. Students who miss questions can earn back half credit on those problems by doing corrections.
Late Homework will be accepted for half of the earned value (yes, it will be graded by accuracy!), and **it must be turned in by the day of the test for that chapter.**
If a student is absent, the district make-up policy will be followed.

HW Hints:

- Check out our class YouTube channel: **https://www.youtube.com/channel/UCh9fLvgw9metmQuIb6vQ5Zw**
- Show all work and draw the diagrams for each problem.
- For extra practice, visit www.khanacademy.org
- *Check out www.mathguy.us for extra help.*

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6.0 Worksheet

Name_____

For #1 – 9, solve each proportion for the variable. Show all work.

1) $\frac{5}{a} = \frac{8}{3}$

2) $\frac{b}{7} = \frac{11}{3}$

3) $\frac{1}{13} = \frac{2}{x}$

4) $\frac{6y}{5} = \frac{2}{15}$

5) $\frac{h-3}{4} = \frac{9}{5}$

6) $\frac{7}{2} = \frac{2x+1}{9}$

7) $\frac{2}{x-3} = \frac{-8}{x+4}$

8) $\frac{5a}{a-2} = \frac{3}{4}$

9) $\frac{3b+1}{7} = \frac{b-2}{3}$

For #10 – 18, simplify each radical. If needed, rationalize the denominator.

10) $\sqrt{27}$

11) $\sqrt{216}$

12) $\sqrt{8}$

13) $\sqrt{\frac{4}{9}}$

14) $\sqrt{\frac{50}{72}}$

15) $\sqrt{\frac{27}{12}}$

16) $\frac{1}{\sqrt{2}}$

17) $\frac{1}{\sqrt{7}}$

18) $\frac{1}{\sqrt{13}}$

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For #19 – 26, simplify each radical. If needed, rationalize the denominator. Challenge: see if you can do these in your head (without showing work!)

19) $\frac{31}{\sqrt{2}}$ 20) $\frac{5}{\sqrt{3}}$ 21) $\frac{8}{\sqrt{11}}$ 22) $\frac{10}{\sqrt{5}}$

23) $\frac{6}{\sqrt{2}}$ 24) $\frac{15}{\sqrt{3}}$ 25) $\frac{8}{\sqrt{2}}$ 26) $\frac{10}{\sqrt{5}}$

For #27 – 29: Consider how you did in Geometry last semester.

27) What are you proud of?

28) How was your effort and persistence in this course?

29) What behaviors did you practice in this class that supported your learning?

For #30 – 31: Consider this new semester for Geometry.

30) What is your academic goal for this course?

31) What are at least 3 behaviors that you can implement to help you meet this goal?

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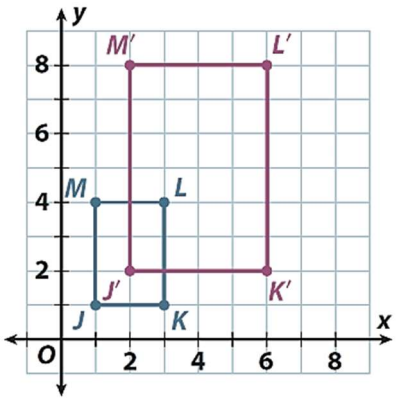
6.1 Worksheet

Name _____

For #1 – 3, describe each dilation as an enlargement or a reduction. Also, find the scale factor of the dilation.

1)



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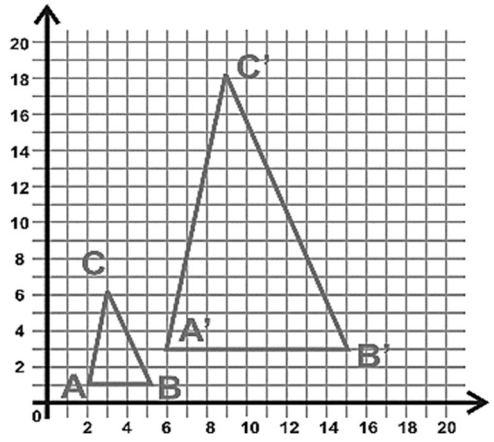

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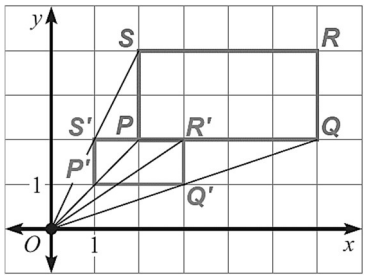


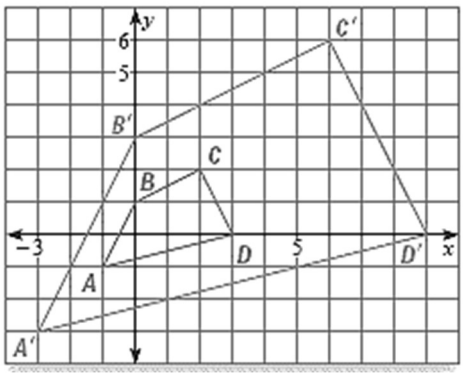
For #4 – 6, each dilation is centered at the origin. Find the image A' with the given coordinates of A and the given scale factor.

4) $A(-1,5); k = 3$

5) $A(8,-4); k = \frac{1}{2}$

6) $A(3,5); k = \frac{1}{3}$

7) **Multiple choice.** Which statement below is true for the dilation shown to the right, which is centered at the origin?



A) The dilation is a reduction with a scale factor of $k = \frac{1}{3}$.
B) The dilation is a reduction with a scale factor of $k = 3$.
C) The dilation is an enlargement with a scale factor of $k = 3$.
D) The dilation is an enlargement with a scale factor of $k = \frac{1}{3}$.

For #8 – 10, given that ΔPQR is dilated to form $\Delta P'Q'R'$, and the dilation is centered at the origin. Find the scale factor of the dilation.

8) PQ = 6; P'Q' = 18

9) QR = 4; Q'R' = 6

10) PR = 8; P'R' = 10

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For #11 – 14, given that $ABCD$ is dilated to form $A'B'C'D'$, and the dilation is centered at the origin. Find the scale factor of the dilation.

11) A(4, 7); $A'(12, 21)$

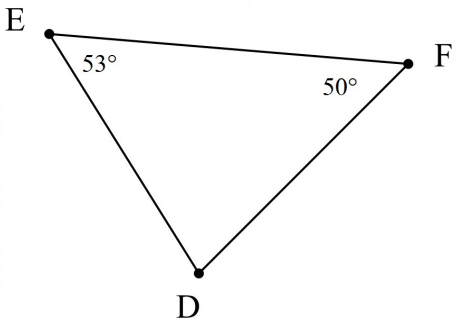
12) $B(6, 5); B'(3, 2.5)$

13) $C(-2, -1); C'(10, 5)$

14) $D(5, 8); D'\left(\frac{5}{3}, \frac{8}{3}\right)$

For #15 – 17: use the diagram shown.

15) Find $m\angle D$.



16) Name the longest side in the triangle. How do you know?

17) Name the shortest side in the triangle. How do you know?

For #18 – 19, solve each proportion for the variable.

18) $\frac{x-2}{5} = \frac{3x}{7}$

19) $\frac{2}{3x} = \frac{7}{4}$

For #20 – 22, factor each expression.

20) $x^2 - 3x - 28$

21) $5x^2 - 10x$

22) $x^2 + 7x + 10$

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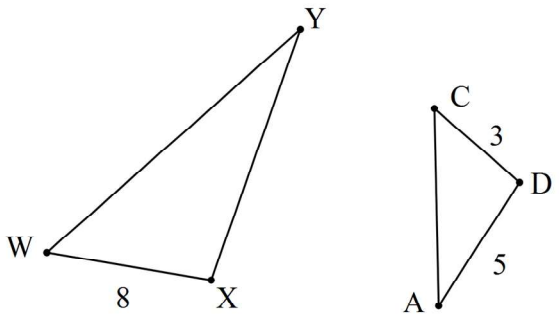
6.2 Worksheet, Day 1

Name _____

For #1 – 4, given that $\Delta WXY \sim \Delta CDA$.



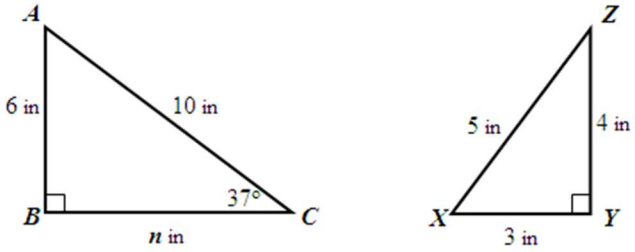
1) Write a proportion for the corresponding sides.

2) Find the scale factor of ΔWXY to ΔCDA. $\frac{\text{first}}{\text{second}}$

3) Find the scale factor of ΔCDA to ΔWXY. $\frac{\text{first}}{\text{second}}$

4) Which angle is congruent to $\angle Y$? How do you know?

For #5 – 9, given that $\Delta ABC \sim \Delta XYZ$.



5) Write a proportion for the corresponding sides.

6) Find the scale factor of ΔABC to ΔXYZ.

7) Find the scale factor of ΔXYZ to ΔABC.

8) What is the measure of $\angle X$?

9) Which angle is congruent to $\angle C$?

10) **Multiple choice.** Given that $\Delta HKM \sim \Delta TWB$, which statement(s) below are true? Select all that apply.

A) $\frac{HK}{TW} = \frac{WB}{KM}$ B) $\frac{HM}{TB} = \frac{KM}{WB}$ C) $\angle H \cong \angle T$ D) $\angle M \cong \angle W$

11) Simplify: $-3\sqrt{40}$

12) Simplify: $\frac{3}{\sqrt{2}}$

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For #13 – 15: Solve each proportion for the variable.

13) $\frac{5}{a} = \frac{2}{7}$

14) $\frac{x+2}{3} = \frac{8}{5}$

15) $\frac{4-b}{10} = \frac{b+2}{11}$

16) Given that ΔABC is dilated by a scale factor of $k = 5$, and the scale factor is centered at the origin. Which statements below are true? **Select all that apply.**

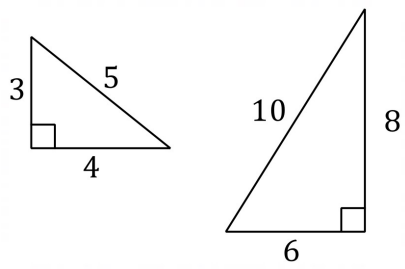
A) If $A(-3, 4)$, then $A'(-15, 20)$.
B) If $B(0, 2)$, then $B'(0, 10)$
C) The dilation is an enlargement.
D) If $C(6, -1)$, then $C'(11, 4)$.
E) $\Delta ABC \cong \Delta A'B'C'$
F) $\Delta ABC \sim \Delta A'B'C'$

17) Which statements below are true? Select all that apply.

A) If two triangles are similar, then each pair of corresponding sides are congruent.
B) If two triangles are similar, then each pair of corresponding angles are congruent.
C) If two triangles are similar, then the corresponding sides are proportional.
D) If two triangles are similar, then the corresponding angles are proportional to the scale factor.

For #18 – 19, find the scale factor of each set of similar figures below (small to large).

18)



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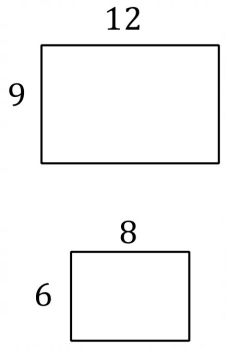

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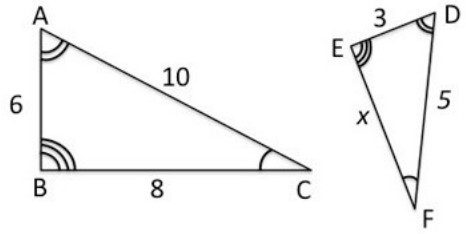
6.2 Worksheet, Day 2

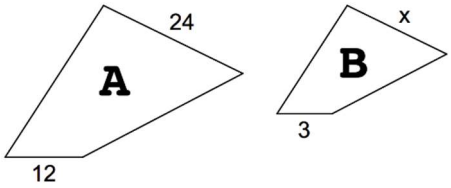
Name _____

For #1 – 2, for each pair of similar figures, find the variable(s).

1) Given $\Delta ABC \sim \Delta DEF$, find *x*.



2) Given figure A ~ figure B. Find *x*.

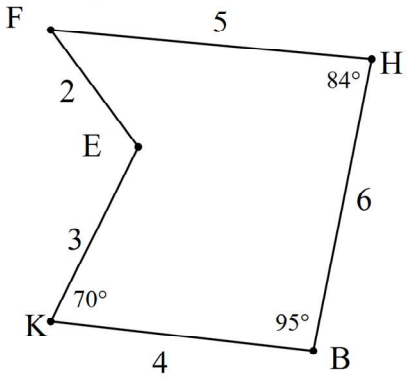


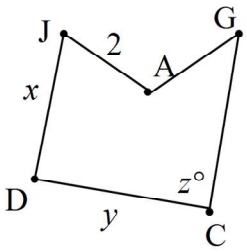
For #3 – 5, use the diagram shown, where FHBKE ~ GCDJA.

3) Find *x*.

4) Find *y*.

5) Find *z*.





6) What is the scale factor of FHBKE to GCDJA? $\frac{\text{first}}{\text{second}}$

7) What is the scale factor of GCDJA to FHBKE? $\frac{\text{First}}{\text{second}}$

8) Complete the proportion: $\frac{FH}{GC} = \frac{HB}{?}$

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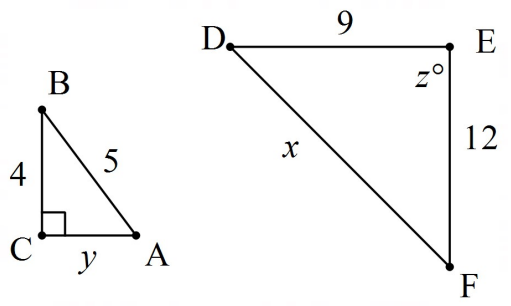
For #9 – 22, use the diagram shown, where $\Delta ACB \sim \Delta DEF$.



9) Find x.

10) Find y.

11) Find z.

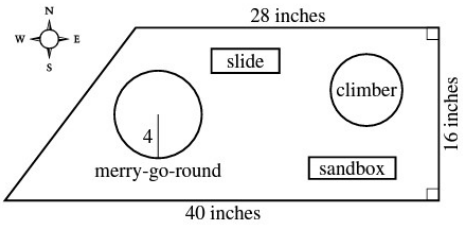
12) What is the scale factor of ΔACB to ΔDEF?

13) Find the perimeter of ΔACB. Hint: use the answer from #10.

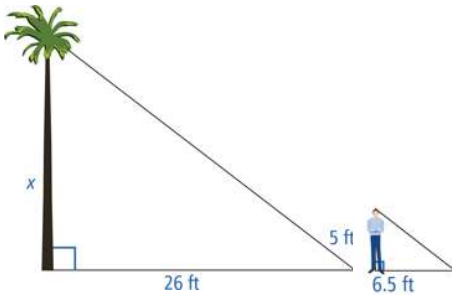
14) Find the perimeter of ΔDEF. Hint: use the answer from #9.

15) Find the ratio of the perimeter of ΔACB to the perimeter of ΔDEF. Compare this to your answer for #12. What do you notice? (Hint: use your answers from #13 and #14. Make sure to reduce your fraction.)

16) The drawing to the right shows a scale drawing of a park, where 1 inch represents 1.5 feet. Find the length of the longest side of the park.



17) In the diagram below, a 5 ft-tall student casts a shadow that is 6.5 feet long. A nearby tree casts a shadow of 26 feet at the same time of day. Assuming that the triangles shown are similar, find the height of the tree.



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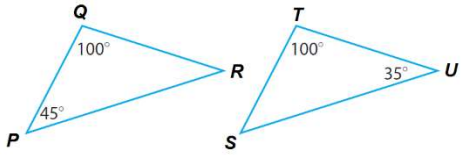
6.3 Worksheet

Name _____

For #1 – 9: Are the pair of triangles shown similar? If so, by what postulate or theorem? Choose from SSS ~, SAS ~, or AA ~.

1)



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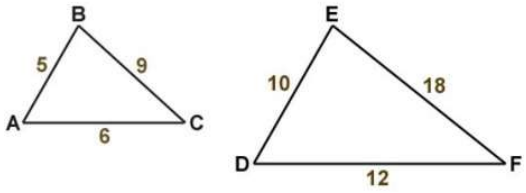

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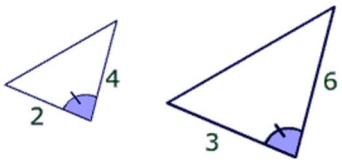

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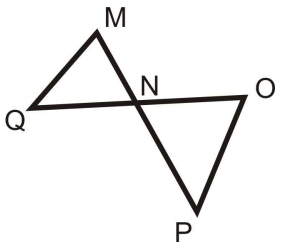

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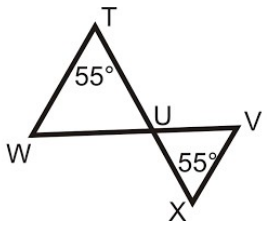

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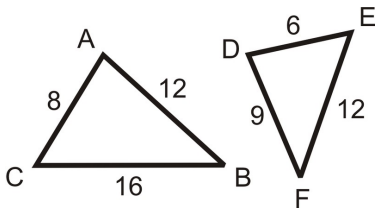

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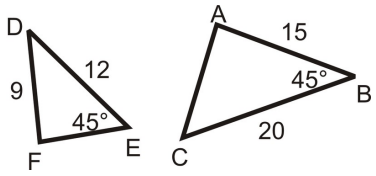

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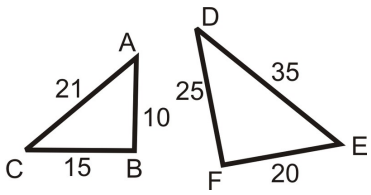

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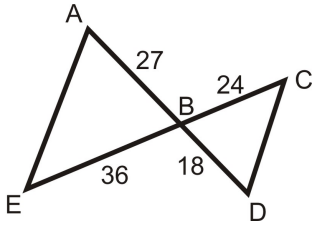

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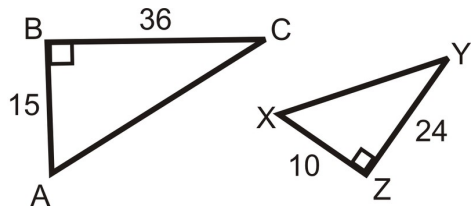
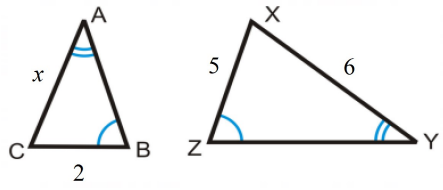
10) **Multiple Choice.** Which statement is true for the triangles shown?

A) $\Delta ABC \sim \Delta XYZ$ by $AA\sim$.
B) $\Delta ABC \sim \Delta XYZ$ by $SAS\sim$.
C) $\Delta ABC \sim \Delta YZX$ by $AA\sim$.
D) $\Delta ABC \sim \Delta XZY$ by $SAS\sim$.



For #11 – 16, find the variable.

11)



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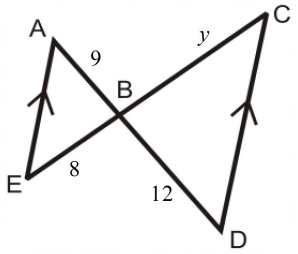

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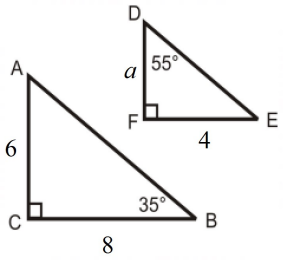

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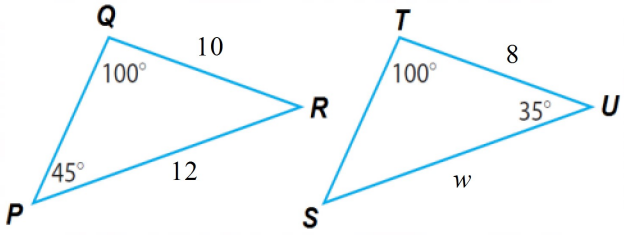

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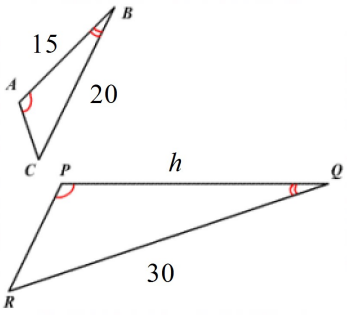

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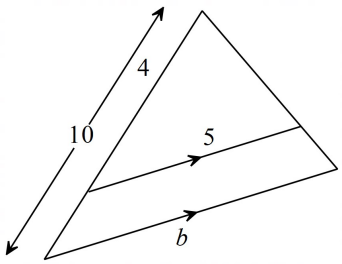

For #17 – 19, solve for the variable by factoring. Hint: your answers will be $x =$ __.

17) $x^2 + 8x + 15 = 0$ 18) $4x^2 - 6x = 0$ 19) $a^2 - 49 = 0$

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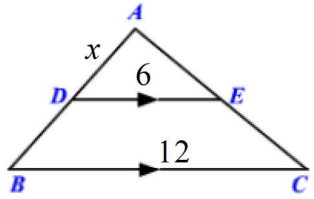
6.4 Worksheet

Name _____

For #1 – 12, solve for the variable(s).

1) Given that $AB = 10$.



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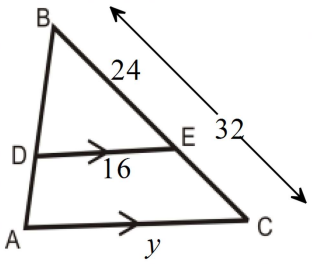

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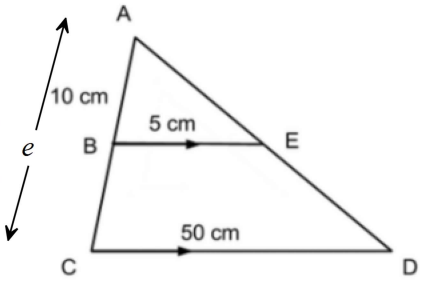

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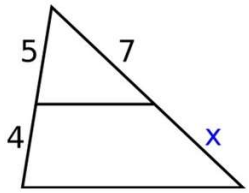
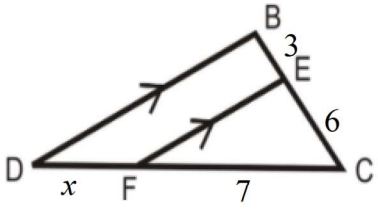


5)



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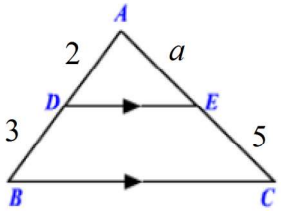

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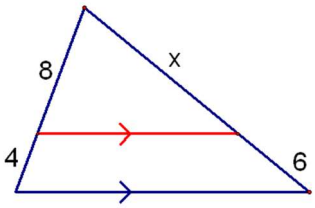

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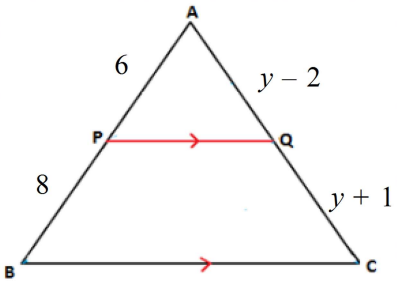

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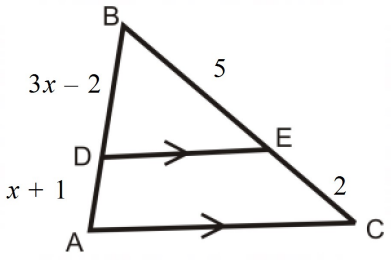

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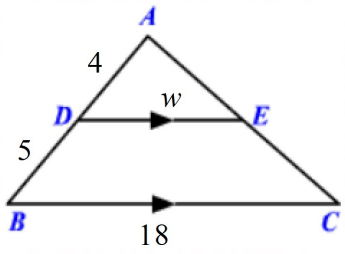

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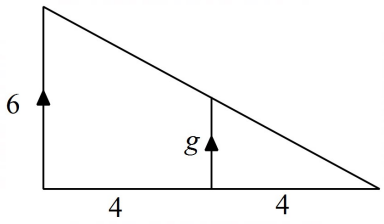

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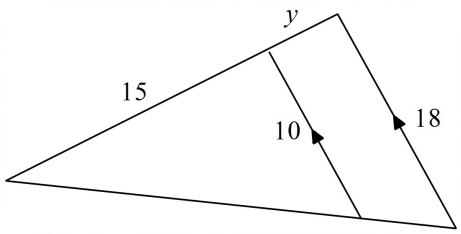
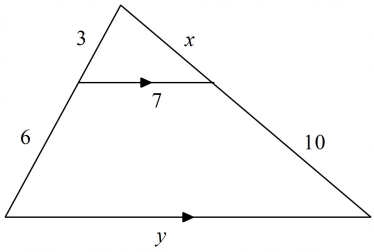


For #13 – 14, use the diagram shown.

13) Find x.

14) Find y.

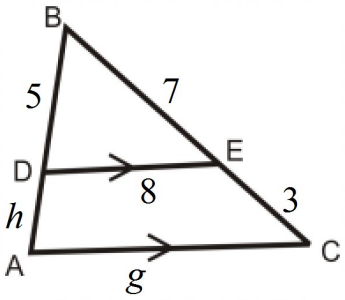


For #15 – 17, use the diagram shown.

15) Complete the similarity statement: $\Delta BDE \sim \Delta$_____

16) Find h.

17) Find g.



18) Given that $B(-2, 6)$ is dilated to form $B'(-1, 3)$. The dilation is centered at the origin, find the scale factor of the dilation.

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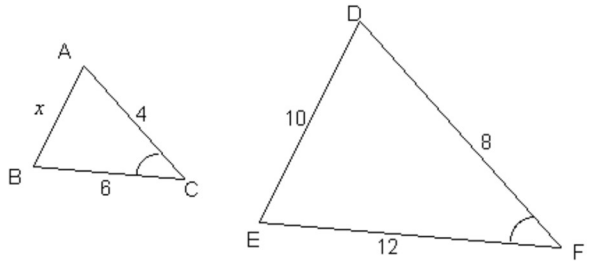
6.5 Worksheet

Name _____

Use the diagram shown for #1 – 4.



1) Find the scale factor of ΔABC to ΔDEF.

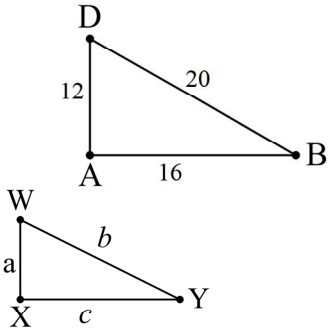
2) Solve for x.

3) What is the ratio of the perimeters of ΔABC to ΔDEF?

4) What is the ratio of the areas of ΔABC to ΔDEF?

5) The perimeter of ΔKJG is 40. The perimeter of ΔSWT is 30. What is the scale factor of ΔKJG to ΔSWT if the triangles are similar?

6) The perimeter of ΔWXY is 36. Find a, b, and c if $\Delta WXY \sim \Delta DAB$.



7) Two triangles are similar, and the ratio of their sides is 2:5. What is the ratio of their areas?

8) Two similar rectangles have a ratio of areas of 49:9. What is the ratio of their sides?

9) $\Delta PQR \sim \Delta WXY$. The ratio of sides of ΔPQR to ΔWXY is $\frac{7}{4}$. If the area of ΔPQR is 98 cm^2, then find the area of ΔWXY.

10) Two similar triangles have a ratio of sides of 3:4. If one side of the small triangle is 9in. long, how long is the corresponding side of the larger triangle

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11) Two similar triangles have a ratio of sides of 3:5. The area of the small triangle is $27in^2$. What is the area of the larger triangle?

12) The areas of two similar polygons are in the ratio 64:81. Find the ratio of the corresponding sides.

13) The areas of two similar polygons are in the ratio 36:16. Find the ratio of the corresponding sides.

Solve each equation for x:

14) $\frac{14}{x} = 42$

15) $\frac{13x-2}{x} = 15$

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Ch 6 Review Worksheet (HOMEWORK!) Name _____

For #1 – 3, for each dilation with the given scale factor k, find the coordinates of the image, given that the scale factor is centered at the origin.

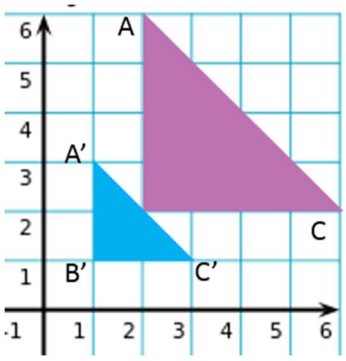
1) $H(5,2); k = 3$

2) $N(-4,9); k = \frac{1}{3}$

3) $D(6,-4); k = \frac{1}{2}$

4) Classify the dilation from #3 as an enlargement or a reduction. How do you know?

5) **Multiple Choice.** For the given dilation, centered at the origin, which statement(s) are true? Choose all that apply.



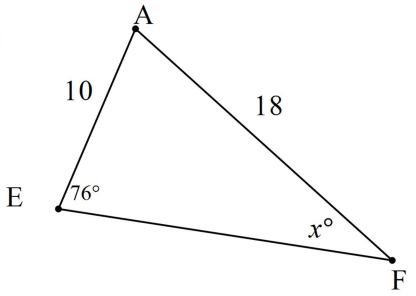
A) The dilation is an enlargement with a scale factor of 2.

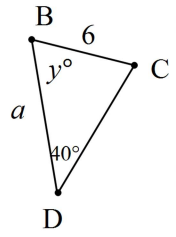
B) The dilation is a reduction with a scale factor of $\frac{1}{2}$.

C) The dilation is an enlargement with a scale factor of $\frac{1}{2}$.

D) The dilation is a reduction with a scale factor of 2.

For #6 – 10, use the diagram shown, where $\Delta AEF \sim \Delta BCD$.





6) Write a proportion for the corresponding sides.

7) Find the scale factor of ΔAEF to ΔBCD.

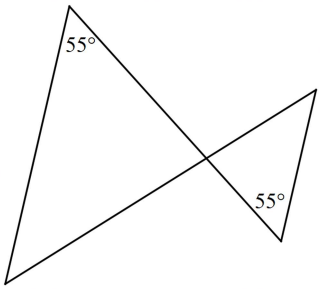
8) Find x.

9) Find y.

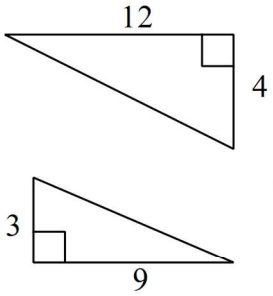
10) Find a.

For #11 – 16, are the triangles similar? If so, by what postulate or theorem? Choose from SSS~, SAS~, or AA~.

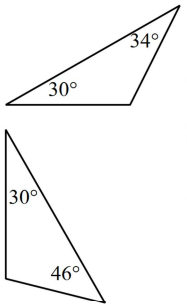
11)



12)



13)



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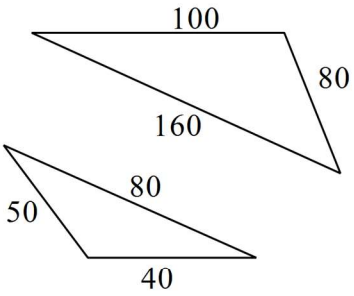
4)



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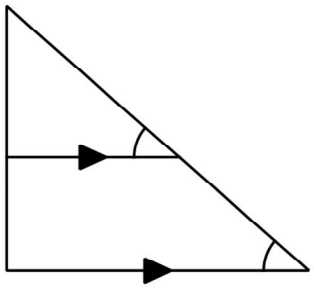

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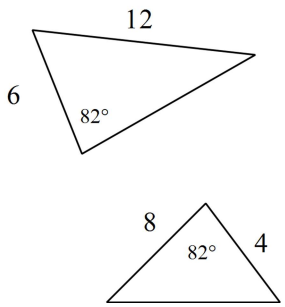
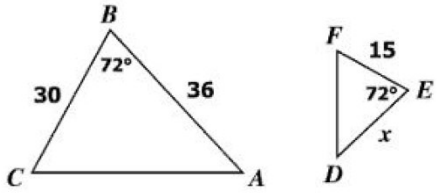


For #17 – 26, find the variable(s).

17) Given that $\Delta ABC \sim \Delta DEF$.



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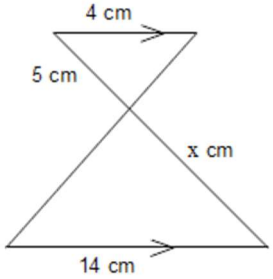

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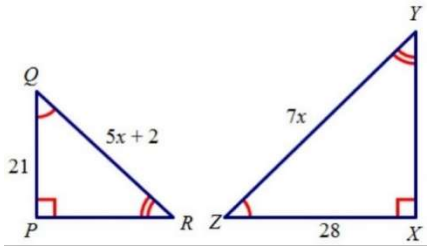

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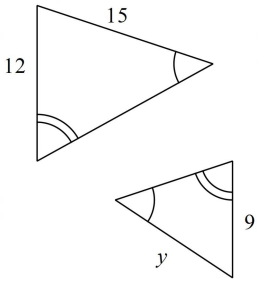

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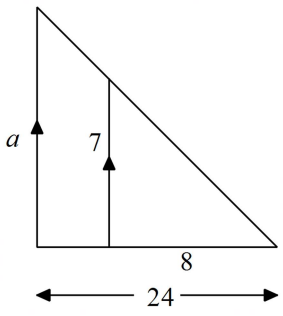

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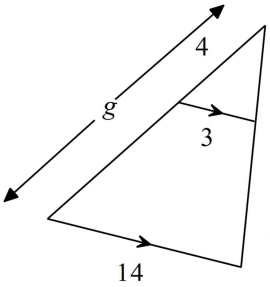

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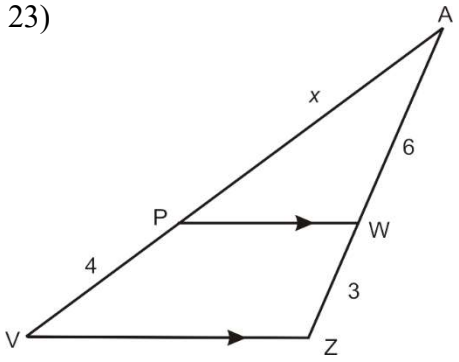
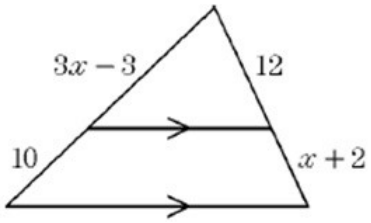


24) Bonus!



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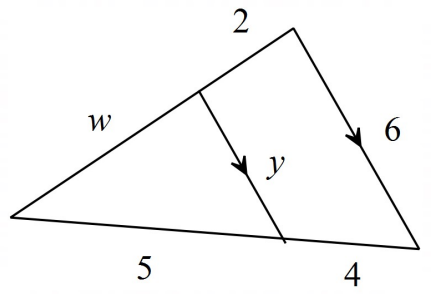

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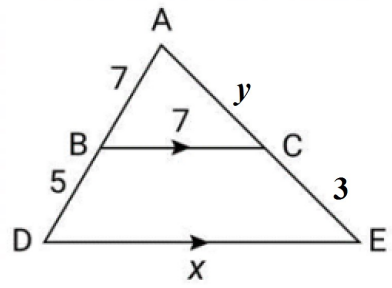

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