

Name:

KEY

Date:

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Geometry – Chapter 5 Review

Use your notes to help you if you get stuck on any sections.

5.0 – Simplify Radical Expressions

1. Write each expression in simplified radical form.

a. $\sqrt{121x^2}$

$$\boxed{11x}$$

b. $5\sqrt{80}$

$$\boxed{20\sqrt{5}}$$

c. $\sqrt{63}$

$$\boxed{3\sqrt{7}}$$

d. $\sqrt{98}$

$$\boxed{7\sqrt{2}}$$

e. $\sqrt{49x^2}$

$$\boxed{7x}$$

f. $\sqrt{48x^2}$

$$\boxed{4x\sqrt{3}}$$

g. $2\sqrt{75}$

$$\boxed{10\sqrt{3}}$$

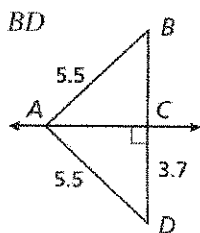
h. $\sqrt{21}$

$$\boxed{\sqrt{21}}$$

5.1 – Properties of Bisectors

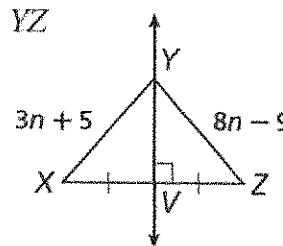
2. Find each measure.

a.



$$\boxed{BD = 7.4}$$

b.



$$\begin{aligned} 3n + 5 &= 8n - 9 \\ -3n &\quad -3n \\ \hline 5 &= 5n - 9 \\ +9 &\quad +9 \\ \hline 14 &= 5n \end{aligned}$$

$$YZ = 8(2.8) - 9$$

$$\boxed{YZ = 13.4}$$

$$\frac{14}{5} = \frac{5n}{5}$$

$$n = 2.8$$

5.2 – Bisectors of Triangles

3. \overline{PX} , \overline{PY} , \overline{PZ} are the perpendicular bisectors of $\triangle GHJ$.

a. Find GY

$$\boxed{42.2}$$

b. Find GP

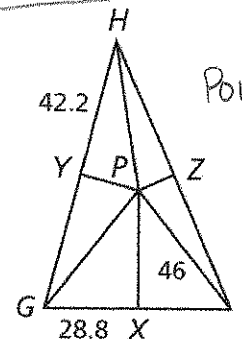
$$\boxed{46}$$

c. Find GJ

$$\boxed{57.6}$$

d. Find PH

$$\boxed{46}$$



Point P is the
circumcenter

4. \overline{UA} and \overline{VA} are angle bisectors of $\triangle UVW$.

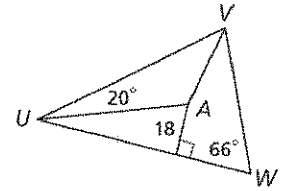
Point A is the incenter

a. Find the distance from A to \overline{UV}

18

b. Find the measure of angle AUW

20°



c. Find the measure of angle UVA

$180 - 66 - 40 = 74$

$\frac{74}{2} = 37^\circ$

d. Find the distance from A to \overline{VW}

18

5.3 – Medians and Altitudes

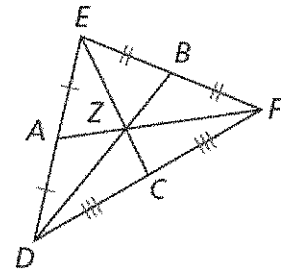
5. In $\triangle DEF$, $DB = 24.6$ and $EZ = 11.6$. Find each length.

a. DZ

$\frac{24.6}{3} = 8.2$
 $DZ = (8.2)(2) = 16.4$

b. ZB

8.2



c. ZC

$\frac{11.6}{2} = 5.8$

d. EC

$11.6 + 5.8 = 17.4$

5.4 – Triangle Midsegments

6. Find each measure.

$AB = \frac{1}{2}(XZ)$

$BC = \frac{1}{2}(XY)$

a. BC

35.1

b. XZ

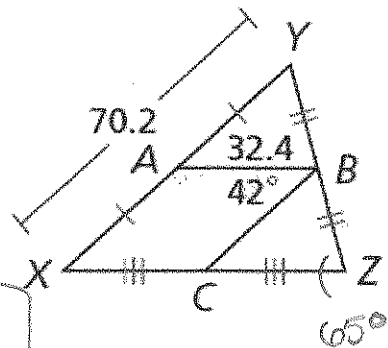
70.2

c. XC

32.4

d. $m\angle BCZ$

42°
 by Alt. Int \angle 's



e. $m\angle BAX$

138° by same side int \angle 's then

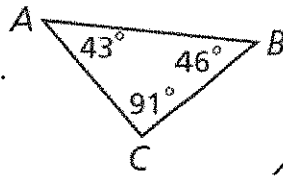
f. $m\angle YXZ$

42° by same side int \angle 's then

5.5-5.6 – Inequalities in Triangles

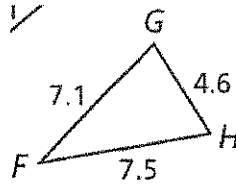
7. List the sides in order from shortest to longest.

BC, AC, AB



8. List the angles in order from smallest to largest.

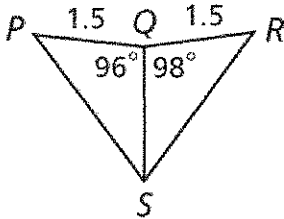
$\angle F, \angle H, \angle G$



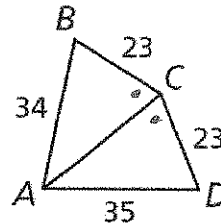
9. Compare the given measures.

a. PS and RS

$RS > PS$



b. $m\angle BCA$ and $m\angle DCA$

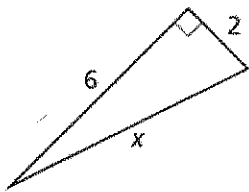


$m\angle BCA < m\angle DCA$

5.7 – Pythagorean Theorem

10. Find the value of x. Give your answer in simplest radical form.

a.



$$2^2 + 6^2 = x^2$$

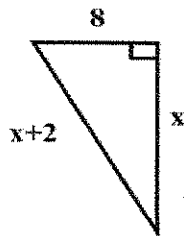
$$4 + 36 = x^2$$

$$\sqrt{40} = \sqrt{x^2}$$

$$\sqrt{4}\sqrt{10}$$

$$\boxed{2\sqrt{10} = x}$$

b.



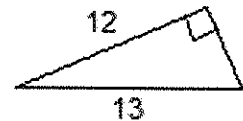
$$x^2 + 8^2 = (x+2)^2$$

$$x^2 + 64 = x^2 + 4x + 4$$

$$64 = 4x + 4$$

$$\frac{60}{4} = \frac{4x}{4} \quad \boxed{x=15}$$

c.



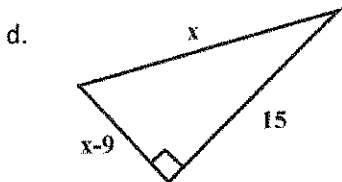
$$a^2 + 12^2 = 13^2$$

$$a^2 + 144 = 169$$

$$-144 \quad -144$$

$$\sqrt{a^2} = \sqrt{25}$$

$$\boxed{a=5}$$



$$(x-9)^2 + 15^2 = x^2$$

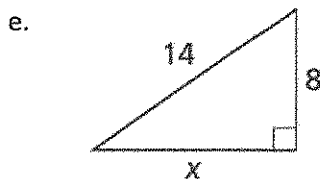
$$x^2 - 18x + 81 + 225 = x^2$$

$$-x^2 \quad -x^2$$

$$-18x + 306 = 0$$

$$+18x \quad +18x$$

$$\frac{306}{18} = \frac{18x}{18} \quad \boxed{x=17}$$



$$x^2 + 8^2 = 14^2$$

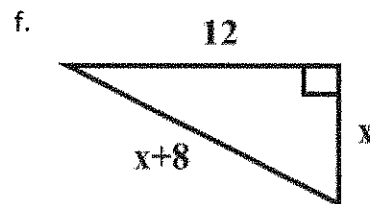
$$x^2 + 64 = 196$$

$$-64 \quad -64$$

$$\sqrt{x^2} = \sqrt{132}$$

$$x = \sqrt{4} \sqrt{33}$$

$$\boxed{x = 2\sqrt{33}}$$



$$x^2 + 12^2 = (x+8)^2$$

$$x^2 + 144 = x^2 + 16x + 64$$

$$-x^2 \quad -x^2$$

$$144 = 16x + 64$$

$$-64 \quad -64$$

$$\frac{80}{16} = \frac{16x}{16} \quad \boxed{x=5}$$

11. Tell if the measures can be the side lengths of a triangle. If so, classify the triangle as acute, obtuse, or right.

a. 9, 12, ^c16

$$9+12 > 16 \quad \leftarrow \text{It's a } \Delta$$

$$9^2 + 12^2 \square 16^2$$

$$225 < 256 \quad \leftarrow c^2 \text{ is bigger}$$

c. 7, 9, 11

$$7+9 > 11 \quad \leftarrow \text{It's a } \Delta$$

$$7^2 + 9^2 \square 11^2$$

$$49+81 \square 121$$

$$130 > 121 \quad \leftarrow c^2 \text{ is smaller}$$

$$\boxed{\text{Acute } \Delta}$$

b. 11, 14, 27

$$11+14 \square 27$$

$$25 < 27 \quad \leftarrow \boxed{\text{Not a } \Delta}$$

d. 8, 15, 17

$$8+15 > 17$$

$$23 > 17 \quad \leftarrow \text{It's a } \Delta$$

$$8^2 + 15^2 \square 17^2$$

$$64+225 \square 289$$

$$289 = 289 \quad c^2 \text{ is equal}$$

$$\boxed{\text{Right } \Delta}$$

Matching: Each choice may be used more than once.

- | | |
|--|-----------------|
| 1. <u>D</u> Equidistant from the sides of a triangle. | A. Circumcenter |
| 2. <u>B</u> where the altitudes of a triangle meet | B. Orthocenter |
| 3. <u>D</u> where the angle bisectors of a triangle meet | C. Centroid |
| 4. <u>C</u> two-thirds of the length from each vertex | D. Incenter |
| 5. <u>A</u> equidistant from the vertices of a triangle | |
| 6. <u>C</u> point where the medians of a triangle meet | |
| 7. <u>A</u> point where the perpendicular bisectors of a triangle meet | |