Geometry
Ch. 8-9A HW#4

Name: _____
Period: _____

1. Triangle RJM has a perimeter of 9 cm and an area of 5 cm^2. If the triangle is enlarged by a scale factor of 3, what are the perimeter and area of the enlarged triangle?

$P = 9 \cdot 3 = 27$ cm

$A = 5(3)^2 = 45\ cm^2$

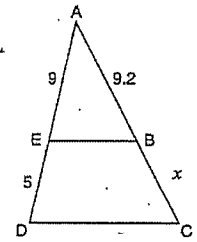
2. Given square $RSTV$, where RS = 9 cm. If square $RSTV$ is enlarged by a scale factor of 2, what is the perimeter and area of the enlarged square.

P of RSTV $= 9 \cdot 4 = 36$ cm

P new $= 36 \cdot 2 = 72$ cm

A RSTV $= 81\ cm^2$ / A new $= 81 \cdot 2^2 = 324\ cm^2$

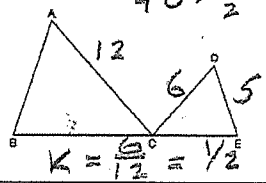
3. In $\triangle ADC$, $\overline{EB} \parallel \overline{DC}$. Find x. Round to the nearest tenth.



$\frac{9}{9.2} = \frac{5}{x}$

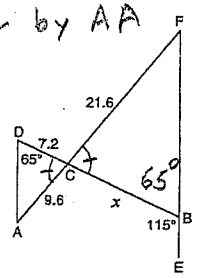
$x = 5.1$

4. $\triangle ABC \sim \triangle DEC$ and $AC = 12$, $DC = 6$, $DE = 5$.
   a) If the perimeter of $\triangle ABC$ is 30, what is the perimeter of $\triangle DEC$? $30 \cdot \frac{1}{2} = 15$
   b) If the area of $\triangle ABC$ is 40, what is the area of $\triangle DEC$? $40 \cdot \frac{1}{2} = 20$



$K = \frac{5}{12} = 1/2$

5. Determine why the triangles shown in the figure are similar and then find x. Show equation.

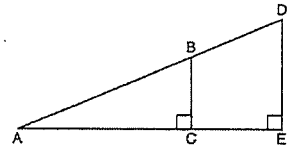


~ by AA

$\frac{x}{7.2} = \frac{21.6}{9.6}$

$x = 16.2$

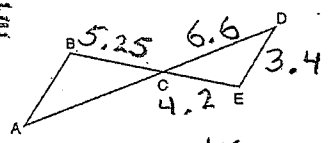
6. In the diagram below of right triangle AED, $\overline{BC} \parallel \overline{DE}$.



Which statement is always true?

(1) $\frac{AC}{BC} = \frac{DE}{AE}$
(3) $\frac{AC}{CE} = \frac{BC}{DE}$
(2) $\frac{AB}{AD} = \frac{BC}{DE}$
(4) $\frac{DE}{BC} = \frac{DB}{AB}$

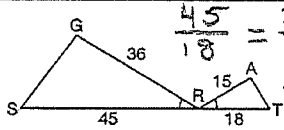
7. If $CD = 6.6$, $DE = 3.4$, $CE = 4.2$ and $BC = 5.25$, what is the length of $\overline{AC}$, to the nearest hundreth?



$\frac{5.25}{4.2} = \frac{AC}{6.6}$

(1) 2.70
(3) 5.28
(2) 3.34
(4) 8.25

8.



$\frac{45}{18} = \frac{36}{15}$? $2.5 = 2.4$?

Which triangle similarity statement is correct?

(1) $\triangle GRS \sim \triangle ART$ by AA.
(2) $\triangle GRS \sim \triangle ART$ by SAS.
(3) $\triangle GRS \sim \triangle ART$ by SSS.
(4) $\triangle GRS$ is not similar to $\triangle ART$.

9. What is $\frac{3}{\sqrt{2}}$ in simple radical form?

$\frac{3}{\sqrt{2}}\left(\frac{\sqrt{2}}{\sqrt{2}}\right) = \frac{3\sqrt{2}}{2}$

10. What is $5\sqrt{20}$ in simple radical form?

$5\sqrt{4}\sqrt{5}$

$5 \cdot 2\sqrt{5} = 10\sqrt{5}$

11. Circle each value that is in simple radical form.

$\sqrt{7}$ $\sqrt{12}$ $\sqrt{\frac{5}{3}}$ $\frac{\sqrt{5}}{5}$

$\sqrt{35}$ $\frac{\sqrt{5}}{\sqrt{2}}$ $\sqrt{49}$ $\sqrt{2}$

12. Pick three values not circled from problem 11 and rewrite them simple radical form.

$\sqrt{12}$: $\frac{\sqrt{5}}{\sqrt{3}}\left(\frac{\sqrt{3}}{\sqrt{3}}\right) = \frac{5\sqrt{3}}{3}$

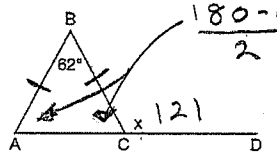
$\sqrt{4}\sqrt{3}$

$2\sqrt{3}$

$\frac{\sqrt{5}}{\sqrt{2}}\left(\frac{\sqrt{2}}{\sqrt{2}}\right) = \frac{5\sqrt{2}}{2}$

$\sqrt{49} = 7$

13.



$\frac{180-62}{2} = 59$

Which value of x makes $\overline{AB} \cong \overline{CB}$?

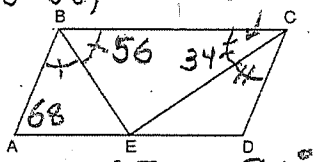
(1) 59°
(2) 62°
(3) 118°
(4) 121°

14. In parallelogram $ABCD$ the bisectors of $\angle ABC$ and $\angle DCB$ meet at E. If $m\angle A = 68°$, find $m\angle BEC$.

$m\angle BEC$

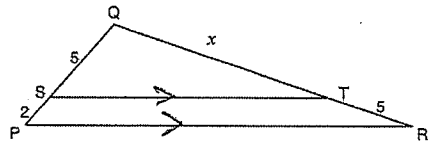
$(180-68) \div 2$

$68 \div 2$



$m\angle BEC = 90°$

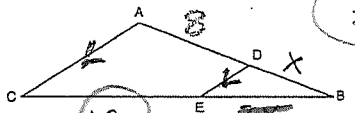
15. In $\triangle PQR$, $\overline{ST} \parallel \overline{PR}$. Find the value of x.



$\frac{5}{x} = \frac{2}{5}$

$2x = 25$ $x = 12.5$

16. In $\triangle PQR$, $\overline{AC} \parallel \overline{DE}$. If EB is 3 more then DB, $AD = 8$, and $CE = 12$, what is the length of $\overline{CB}$?



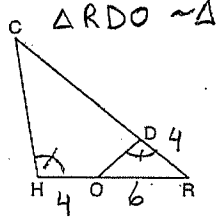
21

$3+x$ $x+3$

$\frac{3+x}{x} = \frac{12}{8}$ $\frac{x+3}{9}$

$24 + 8x = 12x$ $x = 6$

17. In $\triangle CHR$, $\angle H \cong \angle RDO$. If $RD = 4$, $RO = 6$ and $OH = 4$, what is the length of $\overline{CD}$?



$\triangle RDO \sim \triangle RHC$

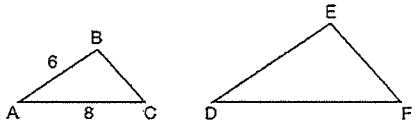
$\frac{CR}{OR} = \frac{RH}{RD}$ $CD = 15 - 4$

$\frac{CR}{6} = \frac{10}{4}$ $CD = 11$

$4\,CR = 60$

$CR = 15$

18. $\triangle ABC \sim \triangle DEF$.



If $AB = 6$ and $AC = 8$, which statement will justify similarity by SAS?

Yes

(1) $DE = 9$, $DF = 12$, and $\angle A \cong \angle D$
(2) $DE = 8$, $DF = 10$, and $\angle A \cong \angle D$
(3) $DE = 36$, $DF = 64$, and $\angle C \cong \angle F$
(4) $DE = 15$, $DF = 20$, and $\angle C \cong \angle F$

$\frac{9}{6} = \frac{12}{8}$ or $\frac{8}{6} = \frac{10}{8}$

#1