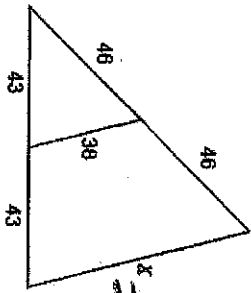


Name Key

Unit 3 REVIEW #1

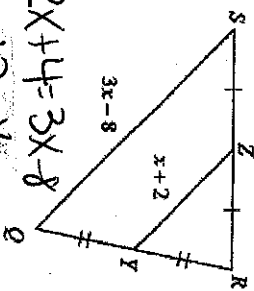
Find the value of x .

1.



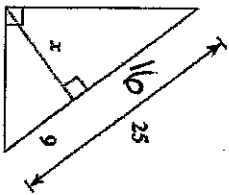
$x = 76$

2.



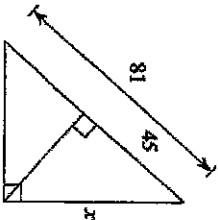
$2x + 4 = 3x - 8$
 $12 = x$

3.



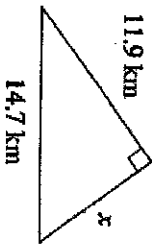
$H = x$
 $S = 10$
 $L = 25$
 $\frac{H}{S} = \frac{x}{10}$
 $\frac{H}{L} = \frac{x}{25}$
 $x^2 = 144$
 $x = 12$

4.



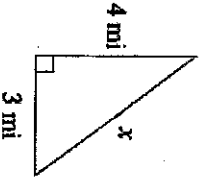
$H = 81$
 $S = x$
 $L = 45$
 $H = x$
 $S = 45$
 $L = 45$

5.



$11.9^2 + x^2 = 14.7^2$
 $141.61 + x^2 = 216.09$
 $x^2 = 74.48$

6.

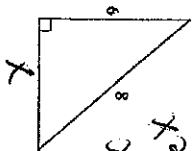


$3^2 + 4^2 = x^2$
 $25 = x^2$
 $5 = x$

$x^2 = 30.45$
 $x = 60.4$

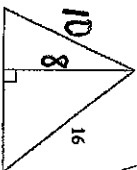
Find the AREA of the triangles.

7.



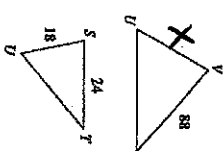
$x^2 + 6^2 = 8^2$
 $x^2 + 36 = 64$
 $x^2 = 28$
 $x = 5.291$

8.



$x^2 + 8^2 = 16^2$
 $x^2 + 64 = 256$
 $x^2 = 192$
 $x = 13.856$

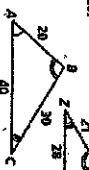
9. $\Delta WUV \sim \Delta TSU$ Find the value of x .



$\frac{x}{18} = \frac{88}{24}$
 $84x = 1584$
 $x = 19$

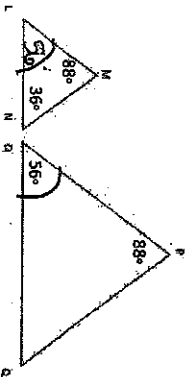
10.

a. Are the rectangles similar? Yes or No.
b. If they are similar, write the similarity statement.
c. If they are similar, give the similarity ratio.



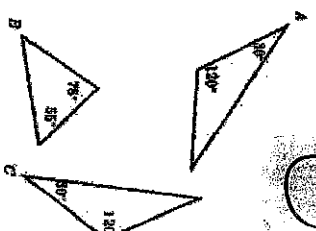
a) $\frac{14}{20} = \frac{21}{30} = \frac{7}{10}$

11. Are these triangles similar?



$88 + 36 = 124$
 $180 - 124 = 56$
Yes
AA

12. Which triangle is similar to Triangle A?



a) Yes
b) $\Delta ABC \sim \Delta XYZ$

$\frac{1}{3} (8 \times 19.856)$

7/10

13.

Which steps correctly state how to construct the circumscribed circle (also called circumcircle) of a triangle?

1. bisect

- A To find the center of the circumscribed circle, find the point of concurrence of the three internal angle bisectors. The radius of the circle is the segment that joins the center and one side of the triangle and is perpendicular to the side.
- B To find the center of the circumscribed circle, find the point of concurrence of the three medians of the triangle. The radius of the circle is the segment that joins the center and one of the vertices of the triangle.
- C To find the center of the circumscribed circle, find the point of concurrence of the three altitudes. The radius of the circle is the segment that joins the center and one of the vertices of the triangle.
- D To find the center of the circumscribed circle, find the point of concurrence of the three perpendicular bisectors. The radius of the circle is the segment that joins the center and one of the vertices of the triangle.

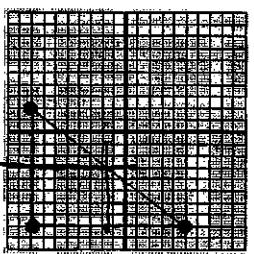
14.

What is the first step in constructing a circle inscribed in a triangle?

- A The measurement of each side
- B The midsegments of the triangle
- C The angle bisectors of the triangle
- D The perpendicular bisectors of the triangle.

15.

Find the center of the circle that you can circumscribe about the triangle (In other words, find the circumcenter!)



- A (3, -1.5)
- B (3, -2)
- C (3, -1)
- D (4, -2.5)

16.

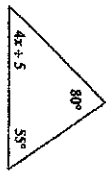
Find the measure of the missing angle:



- A 27°
- B 23°
- C 31°
- D 35°

$$\begin{array}{r}
 10x \\
 + 5x \\
 \hline
 15x \\
 180 \\
 - 15x \\
 \hline
 27^\circ
 \end{array}$$

17. Solve for x:

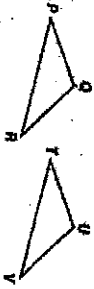


- A $x = 5$
- B $x = -4$
- C $x = 8$
- D $x = 10$

$$\begin{array}{r}
 4x + 5 + 80 + 55 = 180 \\
 4x + 140 = 180 \\
 -140 \quad -140 \\
 \hline
 4x = 40 \\
 \hline
 x = 10
 \end{array}$$

18.

In the figure below, triangle PQR is congruent to triangle TUV .

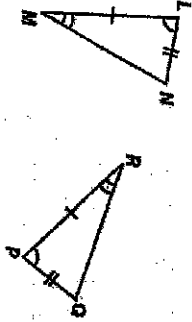


Which statement about the two triangles is true:

- A $\overline{TQ} \cong \overline{TU}$, because if triangle PQR is translated to the right, \overline{TQ} is translated onto \overline{TU} .
- B $\overline{PR} \cong \overline{TU}$, because if triangle PQR is dilated by a factor of 2, \overline{PR} is transformed onto \overline{TU} .
- C $\angle P \cong \angle V$, because if triangle PQR is rotated clockwise 180° , $\angle P$ is transformed onto $\angle V$.
- D $\angle R \cong \angle T$, because if triangle PQR is reflected over a vertical line, $\angle R$ is transformed onto $\angle T$.

19.

Triangle PQR is rotated, reflected, and translated to yield triangle LMN .



Which statement proves that the two triangles are congruent?

- A \overline{PQ} is taken to \overline{LN} , and \overline{PR} is taken to \overline{LM} .
- B $\angle P$ is taken to $\angle L$, and $\angle M$ is taken to $\angle R$.
- C \overline{PQ} is taken to \overline{LN} , \overline{PR} is taken to \overline{LM} , and $\angle P$ is taken to $\angle L$.
- D \overline{PQ} is taken to \overline{LN} , \overline{PR} is taken to \overline{LM} , and $\angle R$ is taken to $\angle M$.

20.

All vertices of an equilateral triangle are shifted 5 units to the left to create a new triangle. Which statement uses the concepts of rigid motion and the congruence theorem for triangles to explain whether the triangles are congruent?

- A The triangles are not congruent because enlarging the triangle by 5 units changes the angles.
- B The triangles are congruent because all angles were maintained to form a new equilateral triangle.
- C The triangles are congruent because shifting the triangle does not change the side lengths of the triangle.
- D The triangles are not congruent because increasing each of the side lengths by the same number of units creates a similar triangle.

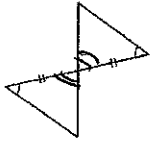
21. A student can pick from the following transformations:

- I. Reflect over the line $y = x$
- II. Translate 5 units up
- III. Rotate 90° clockwise about $(1, 2)$
- IV. Dilate by a scale factor of 2

Which combination of transformations should he NOT use if he wants the triangles to be congruent?

- A. I and IV
- B. I and III
- C. I and II
- D. II and III

22. State how the triangles are congruent:



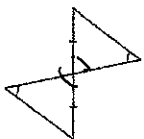
- A. SAS
- B. ASA
- C. AAS
- D. not possible

23. State how the triangles are congruent:



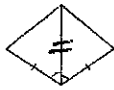
- A. SSS
- B. SAS
- C. HL
- D. not congruent

24. State how the triangles are congruent:



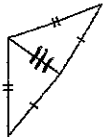
- A. SAS
- B. ASA
- C. AAS
- D. not congruent

25. State how the triangles are congruent:



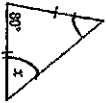
- A SSS
- B SAS**
- C ASA
- D not congruent

26. State how the triangles are congruent:



- A SSS**
- B SAS
- C ASA
- D not congruent

27.

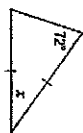


$$\begin{array}{r} 100 \\ - 80 \\ \hline 20 \end{array}$$

- A 80°
- B 100°
- C 40°**

D 60°

28. Find the measure of the missing angle:



- A 72°
- B 36°**
- C 144°
- D 18°

$$\begin{array}{r} 180 \\ - 72 \\ \hline 108 \\ - 72 \\ \hline 36 \end{array}$$

29.

$$\begin{aligned} m\angle ACB &= 40^\circ \\ m\angle ACD &= 20^\circ \\ m\angle A &= 70^\circ \end{aligned}$$

- A 40°, 70°
- B 70°, 90°
- C 90°, 70°
- D 20°, 70°**

