Unit 3 Review (Triangle ≅)

Name: **Key**

Date:_____

1) **36°** What is m∠A?
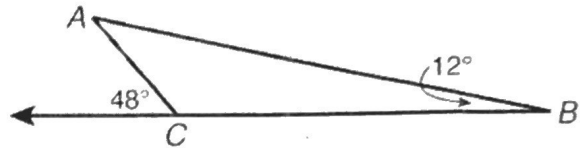
2) **C** If △PQR ≅ △STU, which of the following statements are ALL true?

A) ∠P ≅ ∠S, $\overline{PQ} \cong \overline{TU}$, △RQP ≅ △UTS   B) ∠R ≅ ∠U, $\overline{PR} \cong \overline{SU}$, △QPR ≅ △TUS

C) ∠Q ≅ ∠T, $\overline{PR} \cong \overline{SU}$, △QRP ≅ △TUS   D) ∠Q ≅ ∠T, $\overline{PQ} \cong \overline{TU}$, △RQP ≅ △STU

3) **A** What additional information is needed to prove △MNP ≅ △PQM by AAS?

A) ∠N ≅ ∠Q   B)   ∠MPN ≅ ∠MPQ

C) $\overline{MQ} \cong \overline{PN}$ D) $\overline{MN} \cong \overline{PQ}$
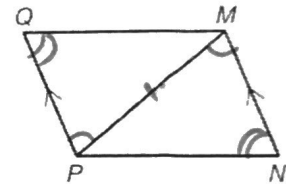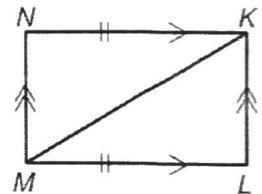

4) **D** Which CANNOT be used to prove △MNK ≅ △KLM?
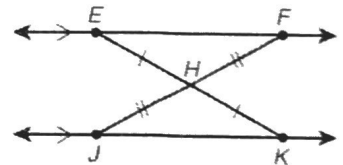
A) SAS   B)   AAS

C) ASA   D)   HL

5) **D** In the figure, H is the midpoint of $\overline{EK}$ and $\overline{FJ}$.
What reason can be used in a proof to show
$\overline{EF} \cong \overline{JK}$?

A) AAS   B) Def. of bisects   C) ASA   D) CPCTC   E) Vertical Angles

6) **D** Suppose △MWR ≅ △CYQ, MW = 8, WR = 9, and CQ = 10. What is YQ?

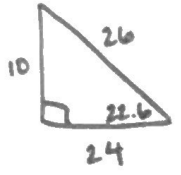A) 10   B) 8   C) 11   D) 9

Name:_____
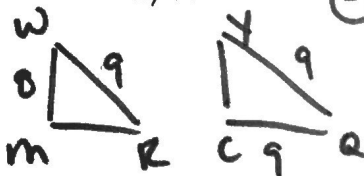
Unit 2 Assessment • **Right Triangle Trigonometry**   SOH CAH TOA Review

**1.** If $\sin 22.6° \approx \frac{10}{26}$ and $\cos 22.6° \approx \frac{24}{26}$, which is true?

- **A.** $\tan 22.6° \approx \frac{10}{24}$
- **B.** $\tan 22.6° \approx \frac{14}{24}$
- **C.** $\tan 22.6° \approx \frac{24}{10}$
- **D.** $\tan 22.6° \approx \frac{26}{10}$

(handwritten triangle: sides 26, 10, 24, angle 22.6)

2. Which equation is true?

- **A.** $\cos 10° = \tan 10°$
- **B.** $\cos 10° = \cos 80°$
- **C.** $\sin 80° = \tan 80°$
- **D.** $\sin 80° = \cos 10°$ *(circled)*

3. An escalator lifts people to the second floor of a store, which is 9 meters above the first floor. The escalator rises at a 30° angle. What is d, the total distance a person travels from the bottom of the escalator to the top of the escalator?

(diagram: 9 m, d, 30°)
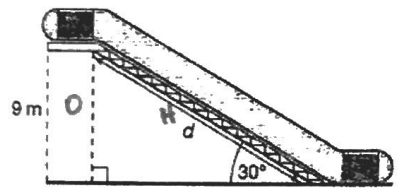
- **A.** 4.5 meters
- **B.** $9\sqrt{2}$ meters
- **C.** $9\sqrt{3}$ meters
- **D.** 18 meters *(circled)*

(handwritten: $\sin 30 = \frac{9}{d}$, $\frac{9}{\sin 30} = 18$)

4. Which of the following is a trigonometric ratio for this triangle?

(triangle D-H-A: 18, 30, 24, x)
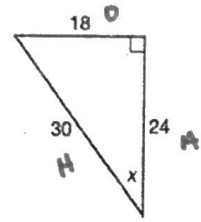
- **A.** $\cos x = \frac{24}{30}$ *(circled)*
- **B.** $\cos x = \frac{18}{24}$
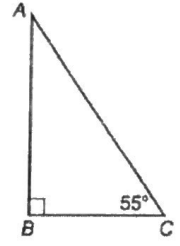- **C.** $\tan x = \frac{24}{18}$
- **D.** $\tan x = \frac{18}{30}$

5. At a certain time of day, a building that is 60 feet tall casts a 75-foot shadow. What is the approximate angle of elevation of the sun when this shadow is cast? Give the answer to the nearest degree.

- **A.** 37°
- **B.** 39° *(circled)*
- **C.** 51°
- **D.** 53°

(handwritten triangle: 60, 75, x; $\tan^{-1}\left(\frac{60}{75}\right) = 38.66°$)

6. *(crossed out)* In $\triangle ABC$, $m\angle C = 55°$ and $\sin C \approx 0.82$.

(triangle A-B-C with 55° at C and 55° near B)
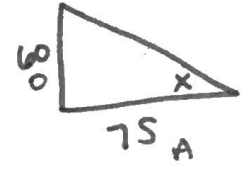
What is $m\angle A$ and cosine of $\angle A$?

- **A.** $m\angle A = 35°$ and $\cos A \approx 0.18$.
- **B.** $m\angle A = 35°$ and $\cos A \approx 0.82$.
- **C.** $m\angle A = 45°$ and $\cos A \approx 0.18$.
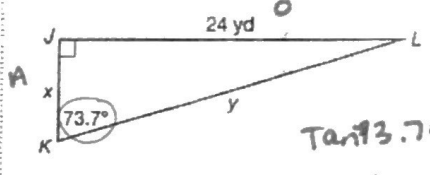- **D.** $m\angle A = 45°$ and $\cos A \approx 0.82$.

7. What is x, the length of $\overline{BC}$ in $\triangle ABC$?

(triangle B-C-A: 60° at B, 14m, 30° at A, x)
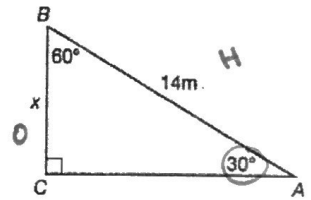
- **A.** 7 meters *(circled)*
- **B.** $7\sqrt{3}$ meters
- **C.** 28 meters
- **D.** $14\sqrt{3}$ meters

(handwritten: $\sin 30 = \frac{x}{14}$, $14 \sin 30 = 7$)

8. Which shows the approximate lengths of sides x and y of $\triangle JKL$?

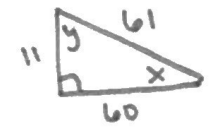*(triangle J-K-L: 24 yd, 73.7°, x, y)*

- **A.** $x = 6.7$ yd and $y = 23$ yd
- **B.** $x = 7$ yd and $y = 25$ yd *(circled)*
- **C.** $x = 23$ yd and $y = 6.7$ yd
- **D.** $x = 25$ yd and $y = 7$ yd

(handwritten: $\tan 73.7 = \frac{24}{x}$, $\frac{24}{\tan 73.7} = 7.01$)

**9.** In a right triangle, one of the acute angles measures x and the other acute angle measures y. If $\sin x = \frac{11}{61}$ and $\cos x = \frac{60}{61}$, what are the values of $\cos y$ and $\tan y$?

- **A.** $\cos y = \frac{11}{61}$ and $\tan y = \frac{11}{60}$
- **B.** $\cos y = \frac{60}{61}$ and $\tan y = \frac{11}{60}$
- **C.** $\cos y = \frac{11}{61}$ and $\tan y = \frac{60}{11}$ *(circled)*
- **D.** $\cos y = \frac{60}{61}$ and $\tan y = \frac{60}{11}$

(handwritten triangle: 11, 61, 60, y, x)

Unit 1 & 4 Review
(Similarity & Transformations)

9) In $\triangle GHJ$, $\overline{KL}$ was drawn parallel to $\overline{GJ}$ to create $\triangle KHL$. What is the value of x?
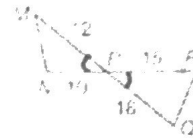
H, 15, x, K, 12, L, G, 18, J

X, 12

15, 18
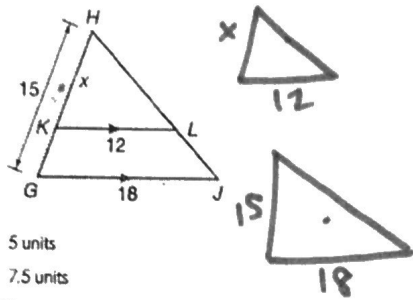
A. 5 units
B. 7.5 units
C. 10 units *(circled)*
D. 12 units

$$\frac{x}{15} \times \frac{12}{18}$$

$$18x = 180 \quad x = 10$$

10) $\overline{MQ}$ and $\overline{NR}$ intersect at point P. Can it be shown that $MNP \quad QRP$?

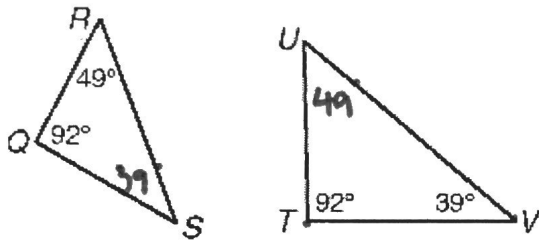M, 12, P, 15, R, 18, Q, N

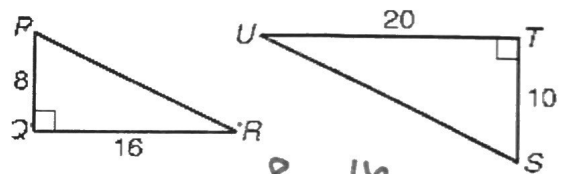$$\frac{12}{18} = \frac{10}{15} \checkmark$$

$$.66 = .66$$

A. Yes, by the AA Postulate.
B. Yes, by the SAS Theorem. *(circled)*
C. Yes, by the SSS Theorem.
D. No, the information given is not sufficient to determine if the triangles are similar

11) Tell which similarity proves the figures are similar (if they are) and write a similarity statement.
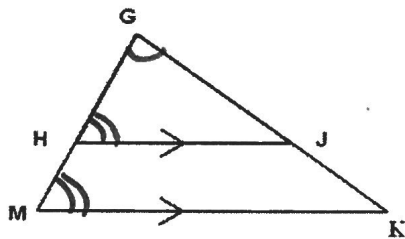
a) $\triangle TVU \sim$ __QSR__ by __AA__

R, 49°, Q, 92°, 39°, S

U, 49, 92°, 39°, T, V

b) $\triangle QPR \sim$ __TSU__ by __SAS__

P, 8, Q, 16, R

U, 20, T, 10, S

$$\frac{8}{10} = \frac{16}{20}$$

$$.8 = .8 \checkmark$$

c) $\triangle GHJ \sim$ __GMK__ by __AA__

G, H, J, M, K

d) $\triangle NPM \sim$ __BCA__ by __SSS__
or CBA

A, 12, 12, C, 8, B

P, 15, 10, M, N, 15
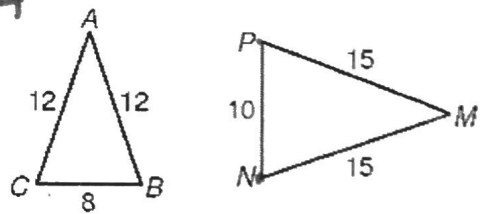
$$\frac{8}{10} = \frac{12}{15} = \frac{12}{15} \checkmark$$

$$.8 \quad .8 \quad .8$$
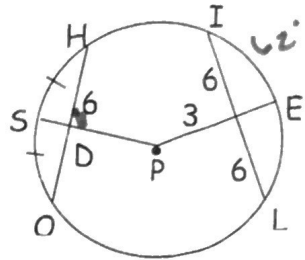
unit 7 Review

Geometry: EOC Review

Circles

Name _____

1. Use the figure to answer the following. Point P is the center of the circle. $m\overset{\frown}{IE} = 62°$

   a. $m\overline{OD} = $ __6__   c. $m\angle PDH = $ __90°__

   b. $m\overset{\frown}{EL} = $ __62°__   d. $m\overline{PD} = $ __3__

Find the measure of the angle marked x.

2. x = __33.5__

   $\dfrac{67}{2} = 33.5$

67° 67°
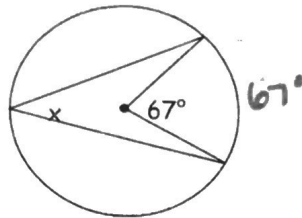
If $\overline{VS}$ is a diameter for ⊙U, mRV = 30° and mSW = 70°, find m∠T.

3. m∠T = __20°__

   $\dfrac{150-110}{2} = 20°$

70° 150° 110° 30°
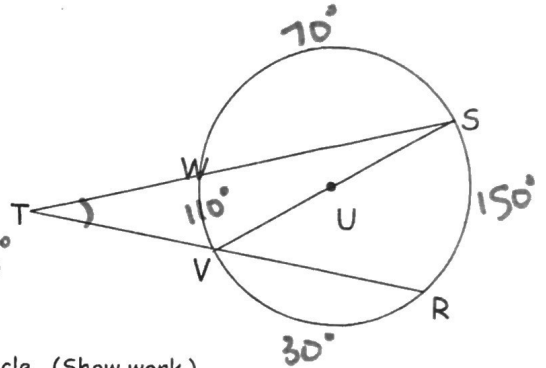
Find the length of the radius of the circle if $\overline{AB}$ is a tangent for the circle. (Show work.)

4. r = __5__
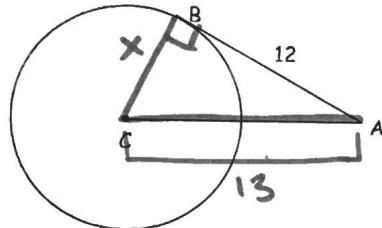
B 12 $\overline{AC} = 13$ A 13
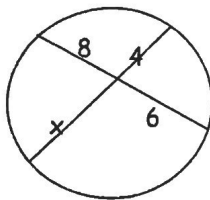
$x^2 + 12^2 = 13^2$

$x^2 + 144 = 169$

$\underline{-144}$

$x^2 = 25$

$x = 5$

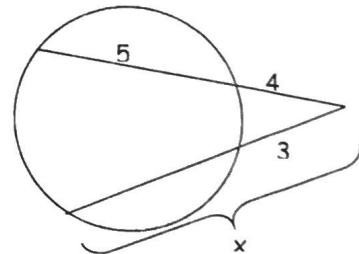Find the length of x in the following figures. Show how you set up your problems.

5. x = __12__   6. x = __12__

$4(x) = 8(6)$ $3(x) = 4(9)$

$4x = 48$ $3x = 36$

$x = 12$ $x = 12$

8 4 x 6

5 4 3 x

7. x = __8__   8. x = __5__

$x^2 = 4(16)$ $x(x+13) = 6(15)$

$x^2 = 64$ $x^2 + 13x = 90$

$x = 8$ $\underline{-90 \quad -90}$

12 4 x

13 x 9 6

$x^2 + 13x - 90 = 0$

$(x+18)(x-5)$ $x = 5$ ✓ 18×-5

$x = -18$ ✗ 13
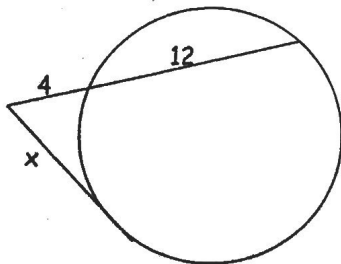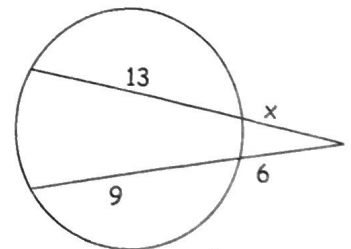
unit 5 & 9 Review

Quadrilaterals/Equations of Circles

Name:_____ Date:_____

1) In parallelograms, opposite sides are ____$\cong$____ and diagonals __bisect__.

2) In a Rhombus, diagonals __bisect__ opposite angles.

3) In quadrilateral ABCD, two consecutive angles are congruent. This quadrilateral is a __rectangle/ square__

Find the measure of each indicated angle:

4)

$\angle D = 60°$

(Quadrilateral with D at top, ? angle, C 120°, B 95°, A 85°)

5)

F 86°   94° E

94°   11x-2
G   D

$11x-2=86$
$+2\ +2$
$11x=88$
$x=8$

$11(8)-2$
$\angle D=86$

Solve each parallelogram for the indicated measure

6)

B 62°   55° C
62° ?
E   D

$\angle D=63°$

7)

Z [100°] Y
80°   11x-10
W   X

$11x=110$
$x=10$

$80+11x-10=180$
$70+11x=180$
$-70\quad\quad -70$

8) KU= 3x+3 UM= 4x-4; x=?

K   L
(3x+3) (4x-4)
U
J   M

$3x+3=4x-4$
$-3\quad\quad -3$
$3x=4x-7$
$-4x\ -4x$
$-x=-7$
$x=7$

9) Find the missing endpoint if the midpoint is (4,-2) and the other endpoint is (1,-6)

$2\cdot 4=\dfrac{1+x}{2}\cdot 2$
$8=1+x$
$-1\ -1$
$x=7$

$2\cdot-2=\dfrac{-6+y}{2}\cdot 2$
$-4=-6+y$
$+6\ +6$
$2=y$

$(7,2)$
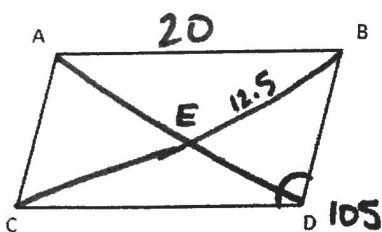
10) Partition segment $\overline{AB}$ by the given ratio: A (6,-4) & B (-10,2); Ratio: 2:5

$6+\dfrac{2}{7}(-10-6)=\dfrac{10}{7}$ or 1.42

$-4+\dfrac{2}{7}(2+4)=\dfrac{-16}{7}$ or -2.28

$\left(\dfrac{10}{7},\dfrac{-16}{7}\right)$

11) In $\square ABCD$, $\overline{AD}$ & $\overline{CB}$ intersect to form point E.

AB= 20 cm, BE=12.5 cm, and $m\angle BDC=105$. Find each measure.

A   20   B
E 12.5
C   D 105

a) BC [25]

b) BD **OMIT**

c) CE [12.5]

d) $m\angle DBA$ 75°

e) $m\angle DCA$ 75°

f) $m\angle BAC$ 105°