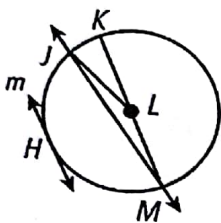Name _____

Topics:

Circles- 3 questions

Proportions/Triangle Midsegment- 2 questions

Right Triangle Trig- 4 questions

Triangle Congruency- 2 questions

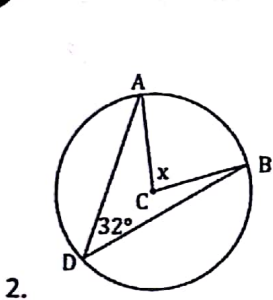Radicals/Polynomials- 8 questions

Factoring- 6 questions

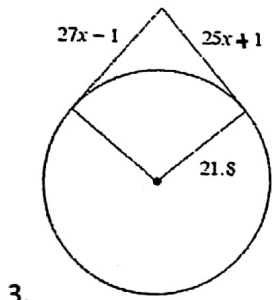List all of the lines/segments that intersect the circle

Chords: $\overline{KM}$, $\overline{JM}$

Secant: $\overleftrightarrow{JM}$

Diameter: $\overline{KM}$

radii: $\overline{LK}$, $\overline{LJ}$, $\overline{LM}$
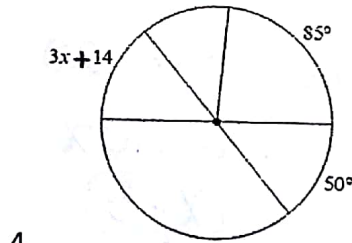
Tangent: line m
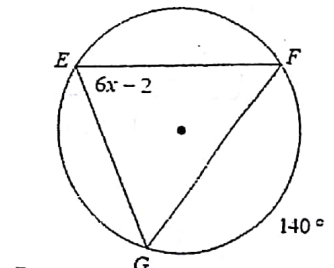
Pt of tangency: Point H

Solve for x:

2.

$$x = 64°$$

3.

$27x-1 = 25x+1$

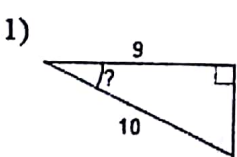$2x = 2$

$$x = 1$$

4.

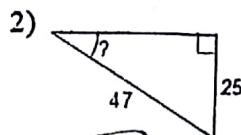$3x+14 = 50$

$3x = 36$

$$x = 12$$

5.

$6x-2 = 70$

$6x = 72$

$$x = 12$$

Find the measure of the indicated angle to the nearest degree.

1)

$\cos x = \dfrac{9}{10}$

$x = \cos^{-1}(9/10)$

$25.84°$

A) 42°   B) 48°
C) 64°   **D) 26°**

2)

$\sin x = \dfrac{25}{47}$

$x = \sin^{-1}\left(\dfrac{25}{47}\right)$
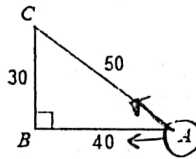
$= 32.13°$

A) 32°   B) 35°
C) 62°   D) 28°
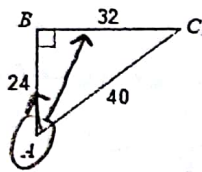
Find the value of each trigonometric ratio.

3) $\sin Z$
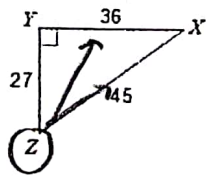
$\dfrac{36}{45} = \boxed{4/5}$

4) $\cos A$

$\dfrac{40}{50} = \boxed{4/5}$

5) $\tan A$

$\dfrac{32}{24} = \boxed{\dfrac{4}{3}}$

Solve for x.

6)
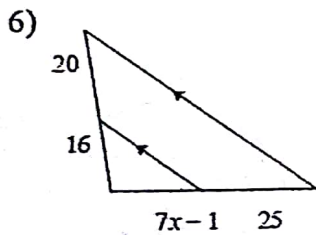
$\dfrac{20}{16} = \dfrac{25}{7x-1}$

$400 = 140x - 20$

$420 = 140x$

$\boxed{x = 3}$

Find the missing side. Round to the nearest tenth.

7)

$\tan 73 = \dfrac{14}{x}$

$x = \dfrac{14}{\tan 73} = \boxed{4.3}$

8)

$\tan 20 = \dfrac{x}{17}$

$\boxed{x = 6.2}$

9)

$\sin 68 = \dfrac{x}{15}$

$\boxed{x = 13.9}$

10)

$\sin 15 = \dfrac{18}{x}$

$x = \dfrac{18}{\sin 15} = \boxed{69.5}$

Solve for x.
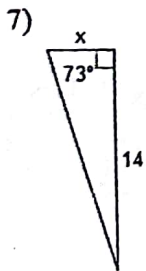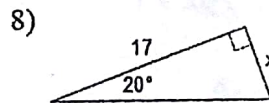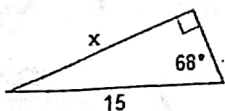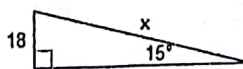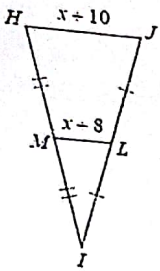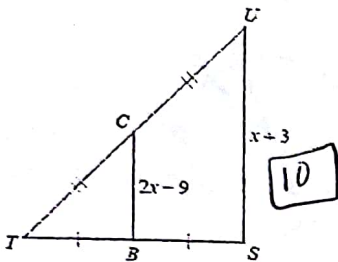
11)

H —— $x+10$ —— J

$x+8$

M —— L

I

$2(x+8) = x+10$

$2x+16 = x+10$

$\boxed{x = -6}$

Find the missing length indicated.

12) Find SU

U

C

$x+3$

$\boxed{10}$

$2x-9$

T —— B —— S

$2(2x-9) = x+3$

$4x-18 = x+3$

$3x = 21$

$\boxed{x=7}$

Factor each completely.

1) $5x^2 + 15x$

$\boxed{5x(x+3)}$

2) $3b^3 + 15b^2 - 6b$

$\boxed{3b(b^2+5b-2)}$

3) $12p^2 + 4p - 8$

$\frac{-6}{3 \times -2}$ 1

$4(3p^2 + p - 2)$

$(3p^2 + 3p - 2p - 2)$

$3p(p+1) - 2(p+1)$

$\boxed{4(3p-2)(p+1)}$

4) $2n^4 + 7n^3 - 49n^2$

$\frac{-98}{14 \times \frac{-7}{7}}$

$n^2(2n^2 + 7n - 49)$

$(2n^2 + 14n)(-7n - 49)$

$2n(n+7) - 7(n+7)$

$\boxed{n^2(2n-7)(n+7)}$

5) $b^2 + 16b + 60$

$\boxed{(b+10)(b+6)}$

$\frac{60}{10 \times 6}$ 16

6) $x^2 - 19x + 90$

$\boxed{(x-10)(x-9)}$

$\frac{90}{-10 \times \frac{-9}{-19}}$

7) $2m^2 - 18$

$2(m^2 - 9)$

$\boxed{2(m+3)(m-3)}$

8) $25n^6 - 4$

$\boxed{(5n^3+2)(5n^3-2)}$

Name the type of Quadratic Expression (PST or DOTS) and Factor each completely.

9) $25m^2 - 1$ DOTS

$$(5m+1)(5m-1)$$

10) $9n^2 - 24n + 16$

$$\frac{144}{-12 \times -12} \quad -24$$

$$(9n^2 - 12n - 12n + 16)$$

$$3n(3n-4) - 4(3n-4)$$

$$(3n-4)(3n-4)$$

Simplify each expression.

11) $(6 + n^3 - 3n) - (8 - 4n + 8n^4)$
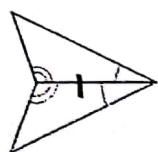
$$6 + n^3 - 3n - 8 + 4n - 8n^4$$

$$-8n^4 + n^3 + n - 2$$

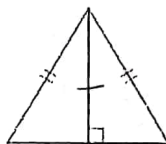12) $(6n^3 + 5n^2 + 7) + (2n^2 - 3 + n^3)$

$$7n^3 + 7n^2 + 4$$

State if the two triangles are congruent. If they are, state how you know.

13)   ASA

14)   HL

Simplify.

16) $\sqrt{180}$ $90 < \frac{45}{2} < \frac{5}{9} < \frac{3}{3}$

$$6\sqrt{5}$$

17) $-\sqrt{125}$ $\frac{25}{5} < \frac{5}{5}$

$$-5\sqrt{5}$$

18) $3\sqrt{54} = 3\sqrt{54} - 3\sqrt{27} < \frac{9}{3} < \frac{3}{3}$

$$-9\sqrt{3}$$

19) $-3\sqrt{3} - 3\sqrt{8} - 3\sqrt{18} < \frac{9}{2} < \frac{3}{3}$

$$\frac{2 \quad 4}{22}$$

$$-3\sqrt{3} - 6\sqrt{2} - 9\sqrt{2}$$

$$-3\sqrt{3} - 15\sqrt{2}$$

20) $4\sqrt{10}(\sqrt{2} + \sqrt{3})$

$$4\sqrt{20} + 4\sqrt{30}$$

$$\frac{5 \quad 4}{2}$$

$$8\sqrt{5} + 4\sqrt{30}$$

Find each product.

21) $(8n - 8)(4n - 3)$

$$32n^2 - 24n - 32n + 24$$

$$32n^2 - 56n + 24$$

22) $(3m - 1)(2m^2 + 5m - 8)$

	$2m^2$	$5m$	-8
$3m$	$6m^3$	$15m^2$	$-24m$
-1	$-2m^2$	$-5m$	8

$$6m^3 + 13m^2 - 29m + 8$$