

**PCH Chapter 4 - 6.2 Exam (No Calculators Permitted)**

**Multiple Response**

Identify one or more choices that best complete the statement or answer the question.

Oblique Triangles

1. Which cases use the Law of Sines?

- a. AASA ✓
- ~~b. AAA~~
- ~~c. SSS~~
- d. SSA ✓

- e. ASA ✓
- ~~f. SAS~~
- ~~g. none of these~~

Graphs

2. Select all that apply

$$f(x) = 2 \tan\left(2x - \frac{\pi}{6}\right)$$

a. Phase Shift  $\frac{\pi}{12}$

~~b. Amplitude none~~ ✓

~~c. Amplitude 2~~

~~d. Phase Shift  $\frac{\pi}{3}$~~

e. period  $\pi$  ✓

f. Phase Shift  $\frac{\pi}{6}$  ✓

~~g. period  $\frac{\pi}{2}$~~  ✓

~~h. period  $2\pi$~~

3. Select all that apply

$$f(x) = 3 \sin\left(\frac{1}{2}x + \frac{\pi}{3}\right)$$

~~a. period  $2\pi$~~

b. Amplitude 3 ✓

~~c. Phase Shift  $\frac{2\pi}{3}$~~

~~d. Phase Shift  $\frac{\pi}{3}$~~

e. period  $4\pi$  ✓

~~f. Amplitude  $\frac{1}{2}$~~

~~g. period  $\frac{\pi}{2}$~~

h. Phase Shift  $-\frac{\pi}{3}$  ✓

4. Select all that apply

$$f(x) = -2 \cos\left(x + \frac{\pi}{3}\right)$$

~~a. Amplitude = -2~~

~~b. period  $\frac{\pi}{2}$~~

c. Phase Shift =  $-\frac{\pi}{3}$  ✓

d. period  $2\pi$  ✓

~~e. period  $\pi$~~

f. Amplitude = 2 ✓

~~g. Phase Shift  $\frac{\pi}{2}$~~

~~h. Phase Shift =  $\frac{\pi}{3}$~~

5. Which cases use the Law of Cosines?

~~a. ASA~~

~~b. AAA~~

c. SSS ✓

d. SSA ✓

e. SAS ✓

f. AAS ✓

~~g. none of these~~

6. Select all that apply

$$f(x) = 2 \sin\left(2x - \frac{\pi}{4}\right)$$

~~a. period  $\frac{\pi}{2}$~~

~~b. Amplitude 4~~

~~c. period  $2\pi$~~

d. Amplitude 2 ✓

~~e. Phase Shift  $\frac{\pi}{2}$~~

~~f. Phase Shift  $\frac{\pi}{8}$~~

g. period  $\pi$  ✓

h. Phase Shift  $\frac{\pi}{4}$  ✓

### Matching

Match the equivalent trig statements.

a.  $\cos x \cos y - \sin x \sin y$

b.  $\cos x \cos y + \sin x \sin y$

c.  $\sin^2 x$

d.  $\sin x \cos y + \cos x \sin y$

e.  $\cos^2 x$

f.  $2 \sin x \cos x$

g.  $\sin x \cos y - \cos x \sin y$

h. none of these

7.  $\sin(x + y) = dv$  ✓

8.  $\cos 2x = hv$  ✓

9.  $1 - \cos^2 x = cv$  ✓

10.  $\frac{1 + \cos 2x}{2} = ev$  ✓

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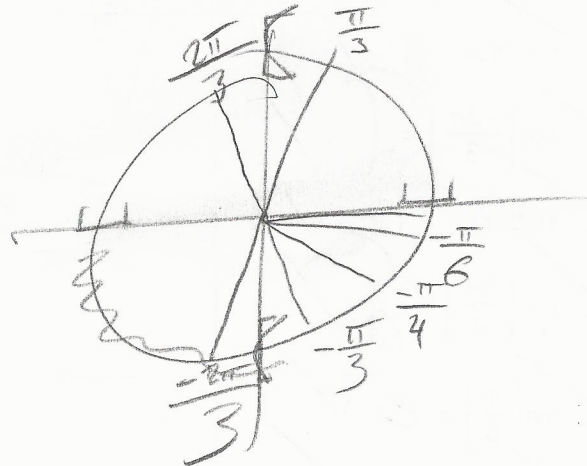
- 11.  $\sin(x - y) =$  *gv*
- 12.  $\cos(x - y) =$  *bv*
- 13.  $\frac{1 - \cos 2x}{2} =$  *cv*
- 14.  $\sin 2x =$  *fv*

Match the Inverse Trig Function with its value.

- a.  $-\frac{\pi}{6}$
- b.  $-\frac{\pi}{4}$
- c.  $-\frac{\pi}{3}$
- d.  $\frac{\pi}{3}$

- e.  $\frac{5\pi}{6}$
- f.  $\frac{3\pi}{4}$
- g.  $\frac{2\pi}{3}$
- h. none of these

- 15.  $\cos^{-1}\left(\frac{1}{2}\right) =$  *dv*
- 16.  $\sin^{-1}\left(-\frac{\sqrt{3}}{2}\right) =$  *cv*
- 17.  $\cos^{-1}\left(\cos\left(-\frac{\pi}{3}\right)\right) =$  *gv*  $\frac{1}{2}$
- 18.  $\cos^{-1}\left(-\frac{1}{2}\right) =$  *bv*  $\frac{\sqrt{3}}{2}$
- 19.  $\tan^{-1}\left(-\frac{\sqrt{3}}{3}\right) =$  *av*
- 20.  $\tan^{-1}\left(\tan\left(-\frac{2\pi}{3}\right)\right) =$   $\frac{\pi}{3} =$  *dv*
- 21.  $\sin^{-1}\left(-\frac{\sqrt{2}}{2}\right) =$  *bv*
- 22.  $\sin^{-1}\left(\frac{\sqrt{3}}{2}\right) =$  *dv*



Match the Trig Function with its value.

a. -1

b.  $-\frac{\sqrt{3}}{2}$

c.  $\frac{\sqrt{2}}{2}$

d.  $-\frac{\sqrt{2}}{2}$

e.  $\frac{1}{2}$

f.  $-\frac{1}{2}$

g. 0

h. 1

23.  $\sin\left(\frac{11\pi}{6}\right) = f \checkmark$

24.  $\cos\left(-\frac{3\pi}{2}\right) = g \checkmark$

25.  $\tan(0) = g \checkmark$

26.  $\cos\left(\frac{-2\pi}{3}\right) = f \checkmark$

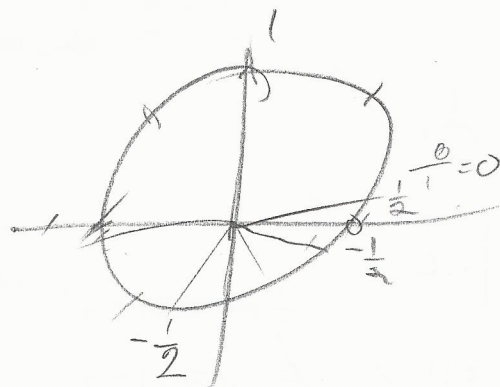
27.  $\sin(5\pi) = g \checkmark$

28.  $\cos\left(\frac{5\pi}{4}\right) = d \checkmark$

29.  $\sin\left(\frac{\pi}{6}\right) = e \checkmark$

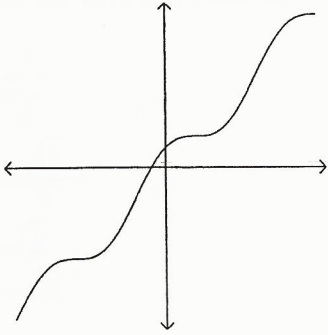
30.  $\cos(3\pi) = a \checkmark$

31.  $\tan\left(\frac{3\pi}{4}\right) = h \checkmark$

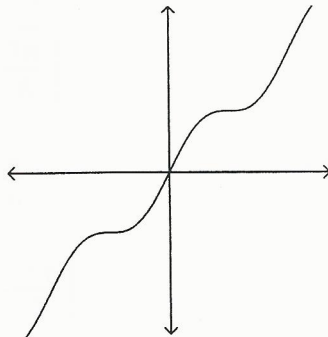


Match the Equation with the graph.

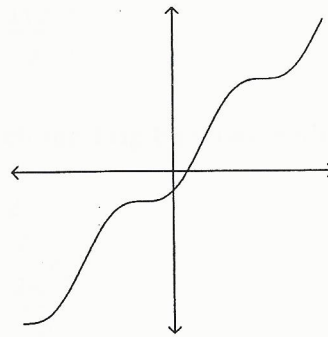
a.



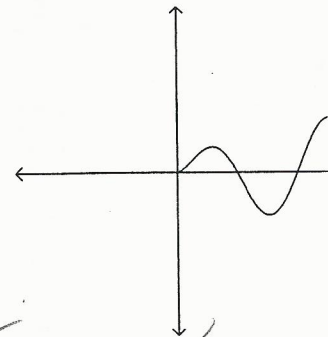
b.



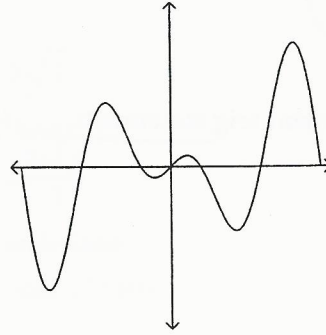
c.



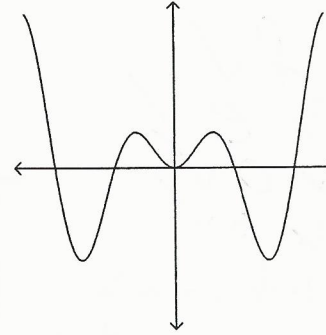
d.



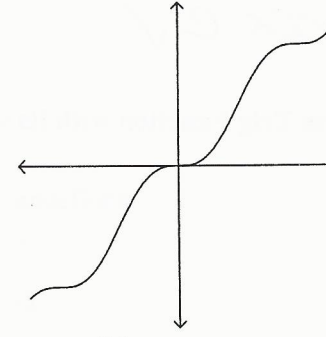
e.



f.



g.



h. none of these

— 32.  $x \cos x$

— 33.  $x + \sin x$

— 34.  $\sqrt{x} \sin x$

*e ✓*  
*b ✓*  
*d ✓*

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- \_\_\_ 35.  $x \sin x$  *f dy*
- \_\_\_ 36.  $2x + \cos x$  *dy*
- \_\_\_ 37.  $x - \sin x$  *dy*

Match the equivalent trig statements. *multiplied*

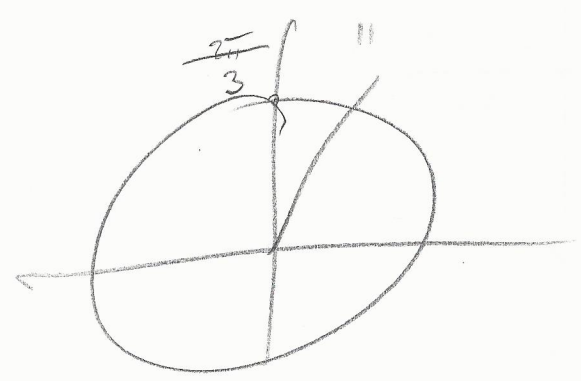
- a.  $\sin^2 x$
- b.  $\cot^2 x$
- c.  $\sec x$
- d.  $\tan^2 x$
- e.  $\csc^2 x$
- f.  $\frac{1}{\cos^2 x}$
- g.  $-\sec x$
- h. none of these

- \_\_\_ 38.  $\sec^2 x = \frac{1}{\cos^2 x}$  *f v*
- \_\_\_ 39.  $1 + \cot^2 x = \csc^2 x$  *e v*
- \_\_\_ 40.  $\sec(-x) = \sec x$  *c v*
- \_\_\_ 41.  $1 - \cos^2 x = \sin^2 x$  *a v*
- \_\_\_ 42.  $1 - \sec^2 x = 1 + \tan^2 x = \sec^2 x$  *h v*
- \_\_\_ 43.  $\csc\left(\frac{\pi}{2} - x\right) = \sec x$  *c v*

Match the Inverse Trig Function with its value.

- a.  $\frac{\pi}{2}$
- b.  $\frac{\pi}{4}$
- c.  $\frac{\pi}{3}$
- d.  $\frac{\pi}{6}$
- e.  $\frac{3\pi}{4}$
- f.  $\frac{2\pi}{3}$
- g.  $\frac{5\pi}{6}$
- h. none of these

- \_\_\_ 44.  $\cos^{-1}\left(-\frac{1}{2}\right) = f$  *v*
- \_\_\_ 45.  $\cos^{-1}(0) = a$  *v*
- \_\_\_ 46.  $\tan^{-1}(1) =$
- \_\_\_ 47.  $\cos^{-1}\left(-\frac{\sqrt{2}}{2}\right) =$



\_\_\_ 48.  $\sin^{-1}(-1) =$

Match the Trig Function with its value.

a.  $\frac{\sqrt{3}}{3}$

b.  $-\frac{\sqrt{3}}{3}$

c.  $\sqrt{3}$

d.  $-\sqrt{3}$

e.  $\frac{2\sqrt{3}}{3}$

f.  $-\frac{2\sqrt{3}}{3}$

g. undefined

h. none of these

\_\_\_ 49.  $\cot(-\pi)$

\_\_\_ 50.  $\csc\left(\frac{7\pi}{6}\right)$

\_\_\_ 51.  $\tan\left(\frac{\pi}{6}\right)$

\_\_\_ 52.  $\tan\left(-\frac{5\pi}{3}\right)$

\_\_\_ 53.  $\tan\left(\frac{11\pi}{6}\right)$

$$\frac{\frac{1}{2}}{\frac{\sqrt{3}}{2}} \quad \frac{1}{\sqrt{3}}$$

Match the Trig Function with its value.

a. 2

b. -2

c.  $\frac{2\sqrt{3}}{3}$

d.  $-\frac{2\sqrt{3}}{3}$

e. undefined

f. 1

g. -1

h. none of these

\_\_\_ 54.  $\tan\left(\frac{5\pi}{4}\right) =$

\_\_\_ 55.  $\csc\left(\frac{-\pi}{6}\right) =$

\_\_\_ 56.  $\sec\left(\frac{5\pi}{6}\right) =$

\_\_\_ 57.  $\sec\left(\frac{7\pi}{6}\right) =$

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\_\_\_ 58.  $\cot\left(\frac{7\pi}{6}\right) =$

\_\_\_ 59.  $\csc\left(\frac{11\pi}{6}\right) =$

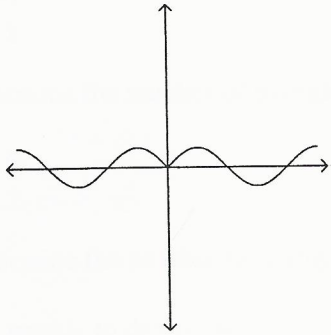
\_\_\_ 60.  $\tan\left(\frac{3\pi}{4}\right) =$

\_\_\_ 61.  $\cot\left(-\frac{3\pi}{4}\right) =$

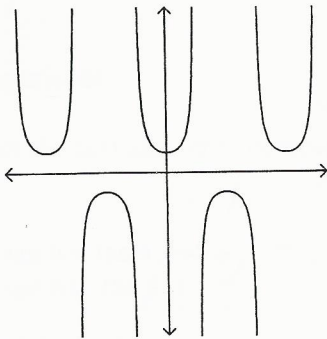


Match the Equation with the graph.

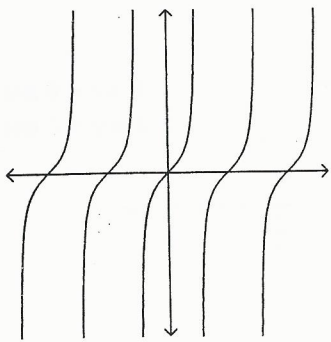
a.



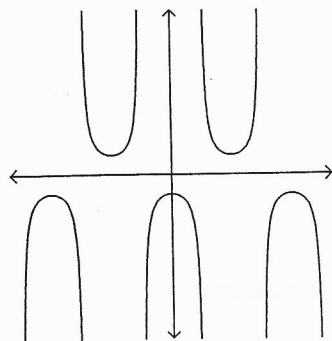
b.



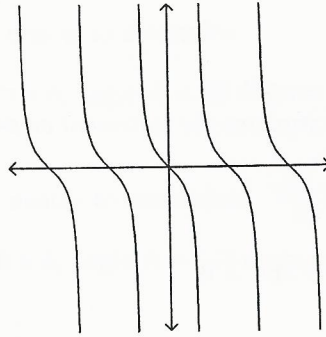
c.



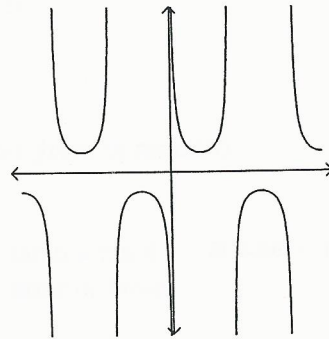
d.



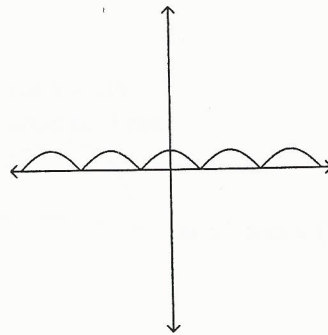
e.



f.



g.



h. none of these

\_\_\_ 62.  $f(x) = |\cos x|$

\_\_\_ 63.  $f(x) = -\tan x$

\_\_\_ 64.  $f(x) = |\sin x|$

\_\_\_ 65.  $f(x) = \sec x$

\_\_\_ 66.  $f(x) = \cot x$

**Multiple Choice**

Identify the choice that best completes the statement or answers the question.

## Ranges

\_\_\_ 67. The range of  $f(x) = \sin^{-1}x$  is

a.  $(0, \pi)$

b.  $(-1, 1)$

c.  $\left[-\frac{\pi}{2}, \frac{\pi}{2}\right]$

d.  $[0, \pi]$

e.  $\left(-\frac{\pi}{2}, \frac{\pi}{2}\right)$

f.  $(-\infty, \infty)$

g. none of these

\_\_\_ 68. The range of  $f(x) = \tan x$  is

a.  $(-\infty, \infty)$

b.  $[0, \pi]$

c.  $\left[-\frac{\pi}{2}, \frac{\pi}{2}\right]$

d.  $(0, \pi)$

e.  $(-1, 1)$

f.  $\left(-\frac{\pi}{2}, \frac{\pi}{2}\right)$

g. none of these

\_\_\_ 69. The range of  $f(x) = \cos^{-1}x$  is

a.  $(-\infty, \infty)$

b.  $(0, \pi)$

c.  $\left(-\frac{\pi}{2}, \frac{\pi}{2}\right)$

d.  $\left[-\frac{\pi}{2}, \frac{\pi}{2}\right]$

e.  $(-1, 1)$

f.  $[0, \pi]$

g. none of these

## Oblique Triangles

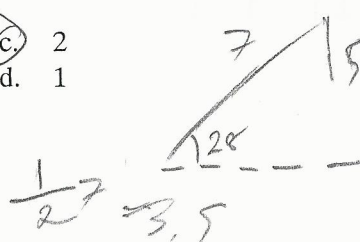
\_\_\_ 70. Determine the number of triangles: side  $a = 5$ , side  $b = 7$ , angle  $A = 28$  degrees

a. 0

b. unable to determine

c. 2

d. 1



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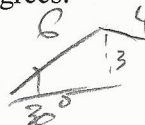
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\_\_\_ 71. Determine the number of triangles: side  $a = 10$ , side  $b = 8$  angle  $A = 35$  degrees.

- a. 0
- b. 1
- c. 2
- d. unable to determine

\_\_\_ 72. Determine the number of triangles: side  $a = 4$ , side  $b = 6$ , angle  $A = 30$  degrees.

- a. 0
- b. 2
- c. 1
- d. unable to determine



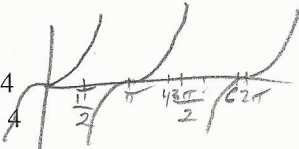
\_\_\_ 73. Determine the number of triangles: side  $a = 4$ , side  $b = 6$ , angle  $A = 120$  degrees

- a. unable to determine
- b. 2
- c. 1
- d. 0

Comparisons

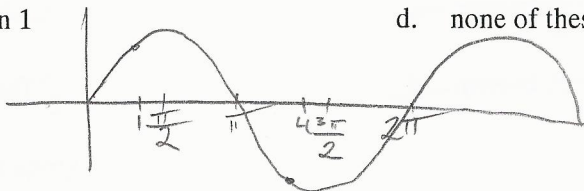
\_\_\_ 74. Select the best answer to compare the values: (Angles given in radians)

- a.  $\tan 6 < \tan 4$
- b.  $\tan 6 > \tan 4$
- c.  $\tan 6 = \tan 4$
- d. none of these



\_\_\_ 75. Select the best answer to compare the values: (Angles given in radians)

- a.  $\sin 4 > \sin 1$
- b.  $\sin 4 < \sin 1$
- c.  $\sin 4 = \sin 1$
- d. none of these



# Student Grade Report

Legend: Incorrect:

**Student: Vestil, Keanu**

	Grade	Total Score	Score (%)
Overall	A	70.00 / 75.00	93.33 <div style="width: 50px; height: 10px; background-color: #ccc; border: 1px solid black;"></div>

## Responses

Question	Response	Correct Answer	Question	Response	Correct Answer	Question	Response	Correct Answer
Question1	(A,D,E)		Question26	F		Question51	A	
Question2	(B,F,G)	(A&B&G)	Question27	G		Question52	C	
Question3	(B,E,H)	(B&C&E)	Question28	D		Question53	A	B
Question4	(C,D,F)		Question29	E		Question54	F	
Question5	(C,E)		Question30	A		Question55	B	
Question6	(D,G,H)	(D&F&G)	Question31	A		Question56	D	
Question7	D		Question32	E		Question57	D	
Question8	H		Question33	B		Question58	H	
Question9	C		Question34	D		Question59	B	
Question10	E		Question35	F		Question60	G	
Question11	G		Question36	A		Question61	F	
Question12	B		Question37	G		Question62	G	
Question13	C		Question38	F		Question63	E	
Question14	F		Question39	E		Question64	A	H
Question15	D		Question40	C		Question65	B	
Question16	C		Question41	A		Question66	H	
Question17	G		Question42	H		Question67	C	
Question18	G		Question43	C		Question68	A	
Question19	A		Question44	F		Question69	F	
Question20	D		Question45	A		Question70	C	
Question21	B		Question46	B		Question71	B	
Question22	D		Question47	E		Question72	B	
Question23	F		Question48	H		Question73	D	
Question24	G		Question49	G		Question74	A	
Question25	G		Question50	H		Question75	B	