

**East Los Angeles College**  
**Department of Mathematics**  
**Math 241**  
**Test 2**

Show your work for credit

$$y = \sec\left(x - \frac{\pi}{6}\right)$$

Determine:

1. The period
2. The phase shift, if any.
3. The interval of one cycle.
4. Sketch one cycle of the curve.
5. Sketch the reciprocal cosecant curve.

$$y = 2\csc(2\pi x)$$

Determine:

6. The period
7. The phase shift, if any.
8. The interval of one cycle.
9. Sketch one cycle of the curve.
10. Sketch the reciprocal secant curve.

$$y = \tan(\pi x)$$

Determine:

11. Period
12. Interval of one cycle
13. Sketch the curve

$$y = 3\cot\left(\frac{1}{4}x\right)$$

Determine:

14. Period
15. Interval of one cycle
16. Sketch the curve

Show that the following functions are even, odd, or neither.

17.  $f(x) = x^3 - \cos(x)$

Find a function that models the simple harmonic motion having the given properties and assuming displacement is 0 at  $t=0$ .

18. Amplitude is 25 cm and frequency is 60 Hz

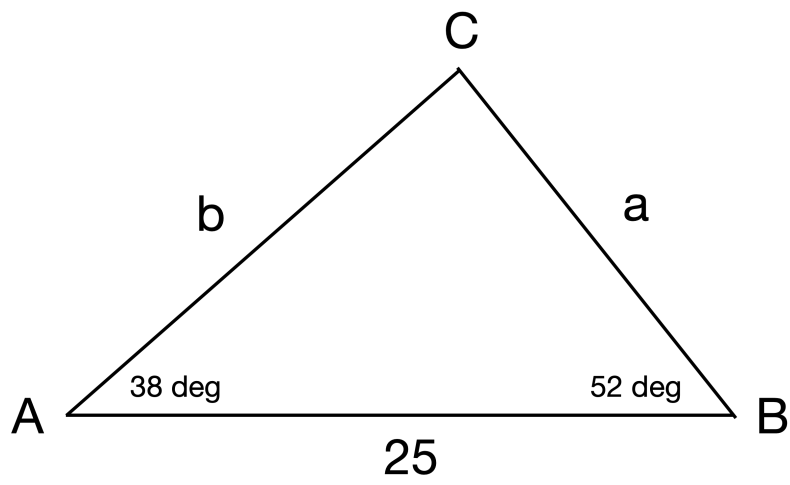
19. Find the arc length that subtends a central angle of  $120^\circ$  in a circle of radius 5 ft.

20. Determine the area of a sector with central angle of  $40^\circ$  in a circle of radius 5 meters.

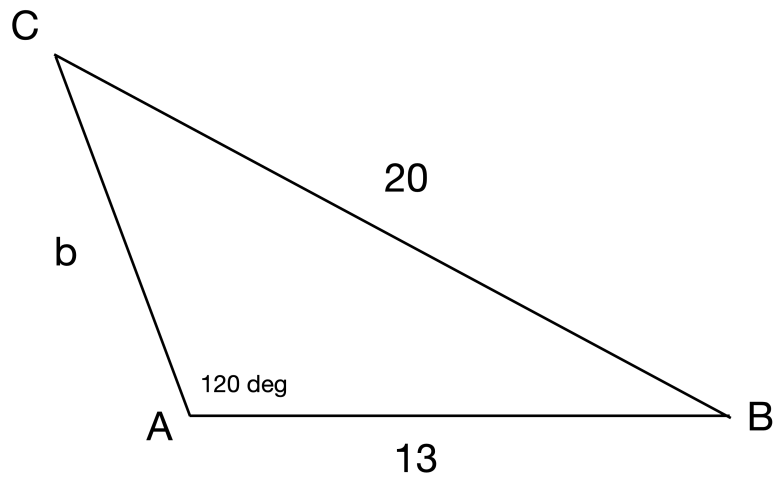
21. City A lies at a latitude  $35^\circ\text{N}$  and City B lies on the same meridian at a latitude of  $15^\circ\text{S}$ . How far apart are the cities?

22. The wheels of car have a 28-inch diameter and are rotating at 600 rpm. Determine the linear speed of the car in miles per hour.

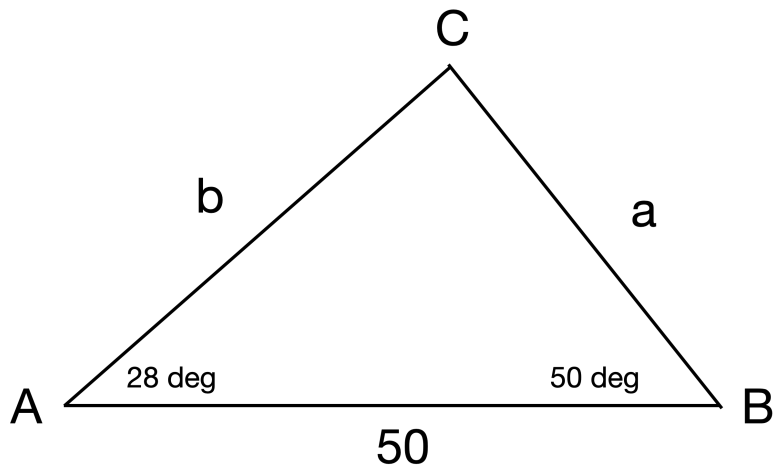
Solve the following triangles  
23.



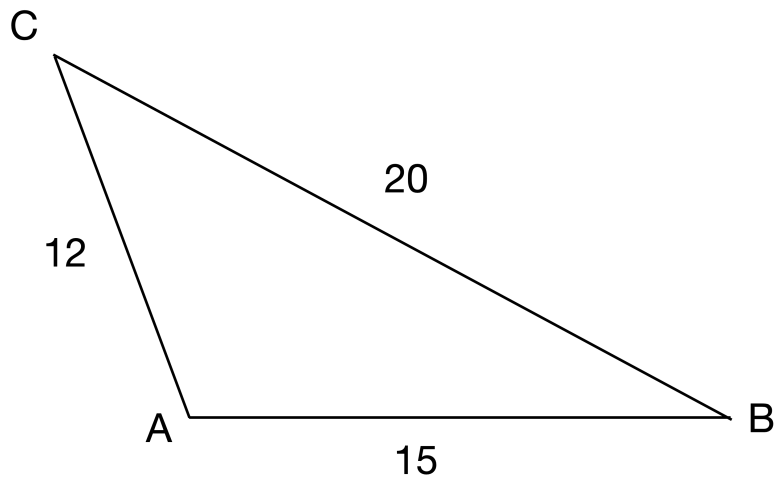
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25.



26.

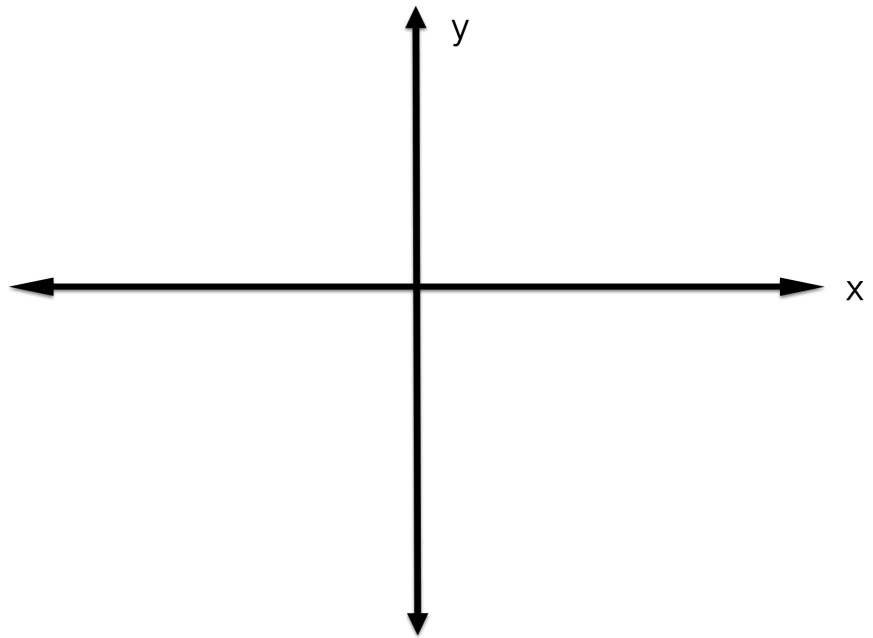


### Answer Sheet

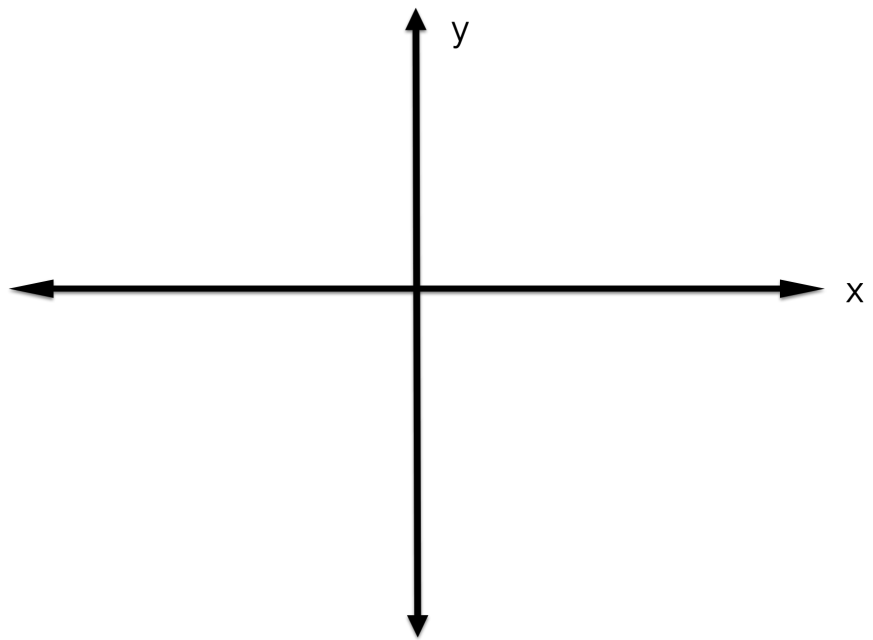
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5	Use Graph Paper	18	
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11		24	Use Test Sheet
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13	Use Graph Paper	26	Use Test Sheet



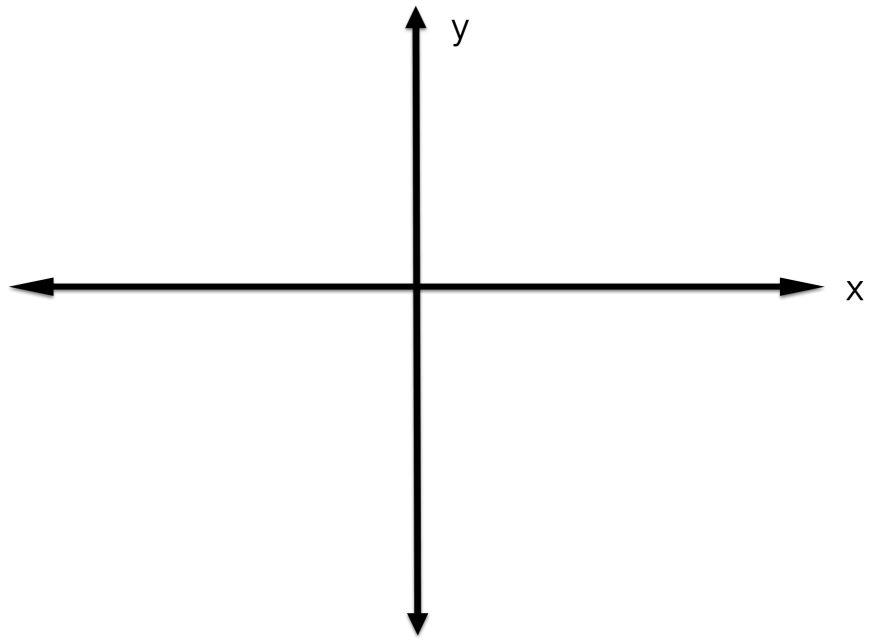
5.



10.



13.



16.

