

East Los Angeles College
Department of Mathematics
Math 241
Test 2 Study Guide

$$y = \sec\left(x - \frac{\pi}{3}\right)$$

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.

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

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.

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

Determine:

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

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

Determine:

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

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

17. $f(x) = x^2 + \sin(x)$

18. $f(x) = x\cos(x)\tan(x)$

19. $f(x) = x^3 - \tan(x)$

20. $f(x) = \frac{\sin(x)}{x}$

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

21. Amplitude is 60 in and period is 0.5 minutes.

22. Amplitude is 2.4 m and frequency is 100 Hz.

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

23. Amplitude is 6 in and period is 5 minutes.

24. Amplitude is 25 cm and frequency is 60 Hz

25. Find the arc length that subtends a central angle of 30° in a circle of radius 6 ft.

26. A circular arc of 3 ft. subtends a central angle of 1.5 radians, determine the radius of the circle.

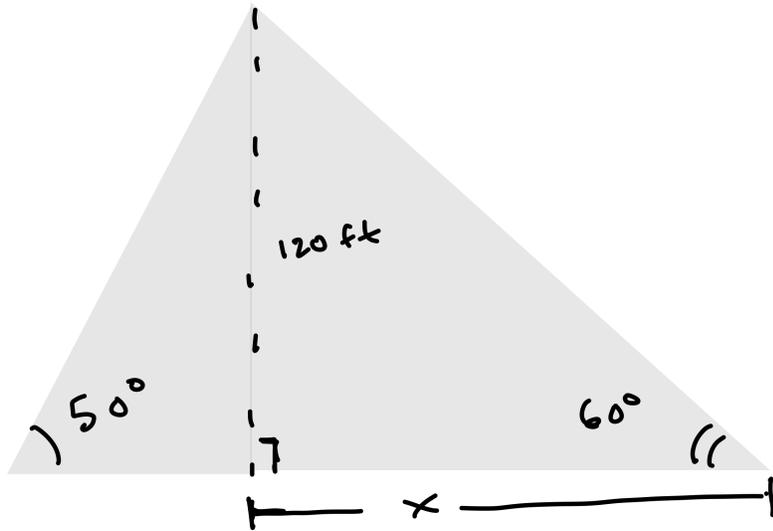
27. Determine the area of a sector with central angle of 20° in a circle of radius 6 meters.

28. City A lies at a latitude 28°N and City B lies on the same meridian at a latitude of 6°S . How far apart are the cities?

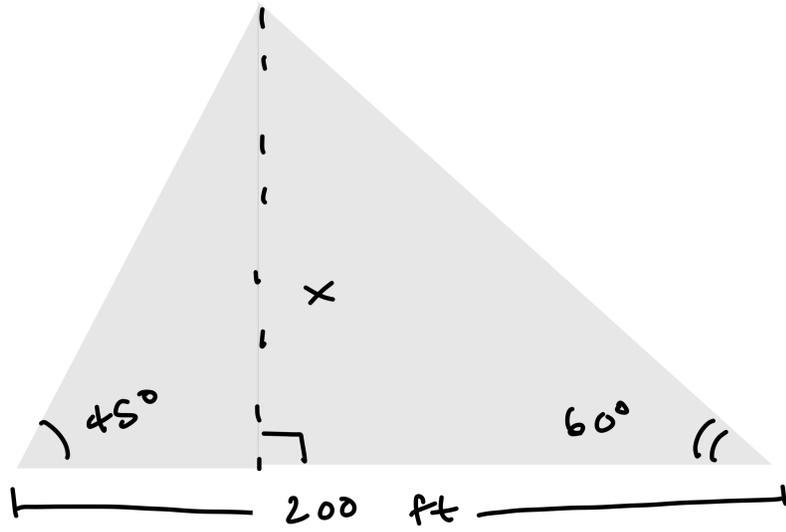
29. How many revolutions will a car wheel of 30-inch diameter make as the car travels 5 miles?

30. The wheels of car have a 26-inch diameter and are rotating at 800 rpm. Determine the linear speed of the car in miles per hour.

31. Determine the value of x .

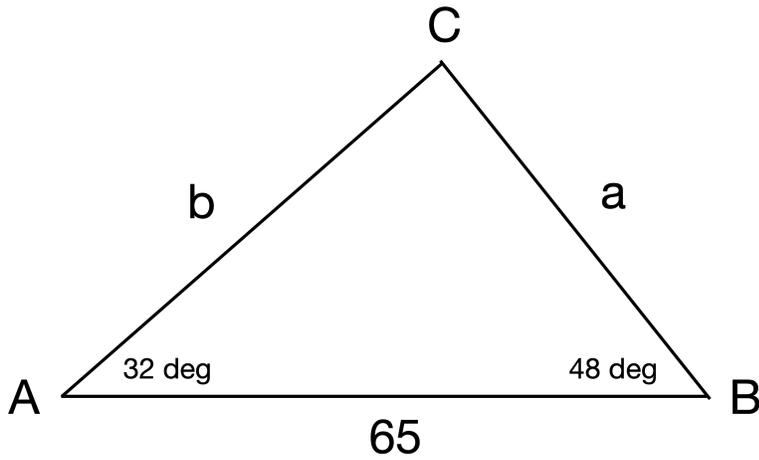


32.

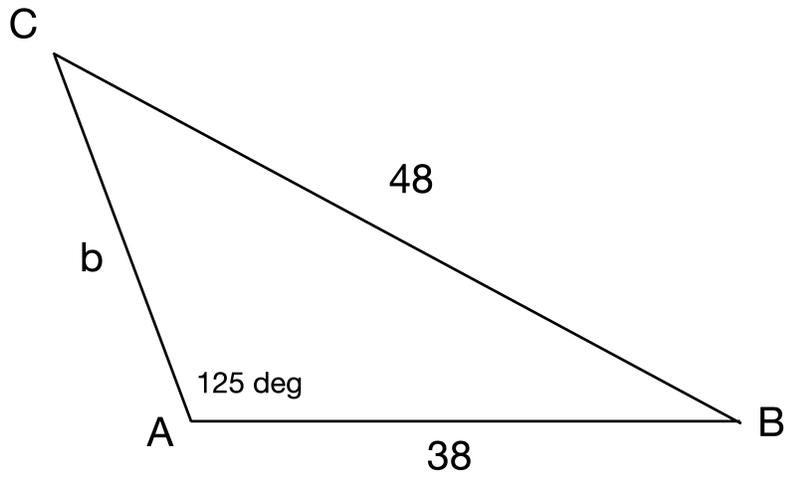


Solve the following triangles

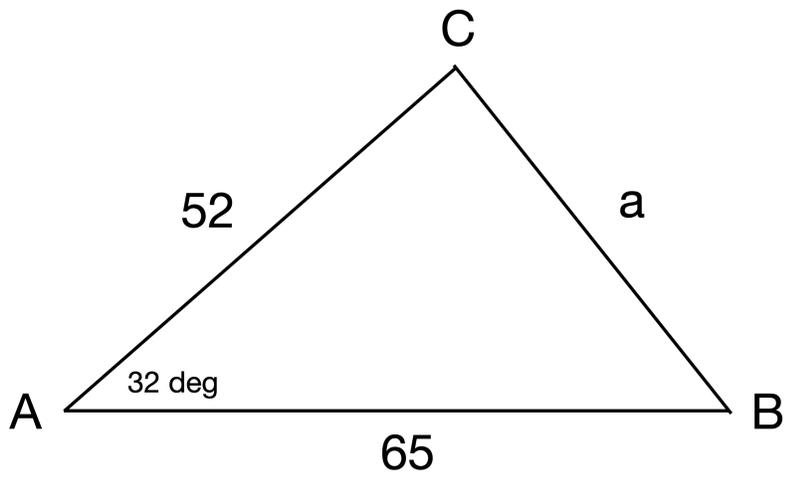
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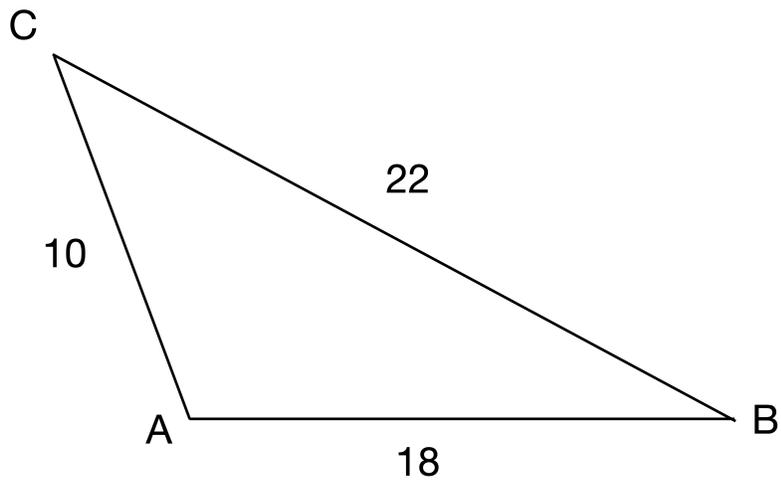
34.



35.



36.



37. What is the area of the triangles found in problem 35?

38. What is the area of the triangle found in problem 36?

Answer Sheet

1		20	
2		21	
3		22	
4		23	
5	Use Graph Paper	24	
6		25	
7		26	
8		27	
9		28	
10	Use Graph Paper	29	
11		30	
12		31	
13	Use Graph Paper	32	
14		33	Answer on Question Sheet
15		34	Answer on Question Sheet
16	Use Graph Paper	35	Answer on Question Sheet
17		36	Answer on Question Sheet
18		37	
19		38	