Math 127 – Spring 2020 Previous HW Assignments

Due Monday, November 30th at 11:59pm

- Section 7.1
  - Topic: Plotting points in polar coordinates
  - Topic: Multiple representations of polar coordinates
  - Topic: Converting rectangular coordinates to polar coordinates: Special angles
  - Topic: Converting polar coordinates to rectangular coordinates
  - Topic: Converting an equation written in rectangular form to one written in polar form
  - Topic: Converting an equation written in polar form to one written in rectangular form: Problem type 1
- Section 7.4
  - Topic: Writing a position vector in ai+bj form given its graph
  - Topic: Writing a vector in ai+bj form given its initial and terminal points
  - Topic: Writing a vector in component form given its initial and terminal points
  - Topic: Magnitude of a vector given in ai+bj form
  - Topic: Magnitude of a vector given in component form
  - Topic: Vector addition and scalar multiplication: ai+bj form
  - Topic: Linear combination of vectors: ai+bj form
  - Topic: Vector addition and scalar multiplication: Component form
  - Topic: Linear combination of vectors: Component form
  - Topic: Unit vectors
  - Topic: Multiplication of a vector by a scalar: Geometric approach
  - Topic: Vector addition: Geometric approach
  - Topic: Vector subtraction: Geometric approach
  - Topic: Finding the magnitude and direction of a vector given its graph
  - Topic: Finding the components of a vector given its graph
  - Topic: Finding the direction angle of a vector given in ai+bj form
- Section 7.5
  - Topic: Dot product of vectors given in ai+bj form
  - Topic: Dot product of vectors given in component form
  - Topic: Finding the angle between two vectors given in component form
  - Topic: Classifying vector relationships by finding the angle between two vectors given in ai + bj form

Topic Due Monday, November 16th at 11:59pm

- Section 6.2
  - Topic: Solving a triangle with the law of sines: Problem type 1
  - Topic: Solving a triangle with the law of sines: Problem type 2
  - Topic: Solving a word problem using the law of sines
- Section 6.3
  - Topic: Solving a triangle with the law of cosines

    - Topic: Using trigonometry to find the area of a right triangle
    - Topic: Finding the area of a triangle using trigonometry
    - Topic: Heron's formula

Topic Due Monday, November 9th at 11:59pm

- Section 6.1
    - Topic: Using a trigonometric ratio to find a side length in a right triangle
    - Topic: Using trigonometry to find a length in a word problem with one right triangle
    - Topic: Using a trigonometric ratio to find an angle measure in a right triangle
    - Topic: Using trigonometry to find angles of elevation or depression in a word problem
    - Topic: Solving a right triangle

Due Monday, October 26th at 11:59pm

- Section 5.3
    - Topic: Double-angle identities: Problem type 1
    - Topic: Double-angle identities: Problem type 2
    - Topic: Double-angle identities: Problem type 3
    - Topic: Power-reducing identities
    - Topic: Half-angle identities: Problem type 1
    - Topic: Half-angle identities: Problem type 2
    - Topic: Proving trigonometric identities using double-angle properties
- Section 5.4
    - Topic: Product-to-sum and sum-to-product identities: Problem type 1
    - Topic: Product-to-sum and sum-to-product identities: Problem type 2
    - Topic: Proving trigonometric identities using sum-to-product formulas
- Section 5.5
    - Topic: Finding solutions in an interval for a basic equation involving sine or cosine
    - Topic: Finding solutions in an interval for a basic tangent, cotangent, secant, or cosecant equation
    - Topic: Solving a basic trigonometric equation using a calculator
    - Topic: Solving a basic trigonometric equation involving sine or cosine
    - Topic: Solving a basic trigonometric equation involving tangent, cotangent, secant, or cosecant
    - Topic: Solving a basic trigonometric equation involving tangent, cotangent, secant, or cosecant
    - Topic: Finding solutions in an interval for a trigonometric equation in factored form
    - Topic: Finding solutions in an interval for a trigonometric equation with a squared function: Problem type 1
    - Topic: Finding solutions in an interval for a trigonometric equation with a squared function: Problem type 2
    - Topic: Finding solutions in an interval for a trigonometric equation using Pythagorean identities: Problem type 1
    - Topic: Finding solutions in an interval for a trigonometric equation using Pythagorean identities: Problem type 2

- Topic: Finding solutions in an interval for an equation with sine and cosine using double-angle identities
- Topic: Solving a trigonometric equation involving an angle multiplied by a constant
- Topic: Finding solutions in an interval for a trigonometric equation with an angle multiplied by a constant

Due Monday, October 19th at 11:59pm

- Section 5.1
  - Topic: Simplifying trigonometric expressions
  - Topic: Verifying a trigonometric identity
  - Topic: Proving trigonometric identities: Problem type 1
  - Topic: Proving trigonometric identities: Problem type 2
  - Topic: Proving trigonometric identities: Problem type 3
  - Topic: Proving trigonometric identities using odd and even properties
- Section 5.2
  - Topic: Sum and difference identities: Problem type 1
  - Topic: Sum and difference identities: Problem type 2
  - Topic: Sum and difference identities: Problem type 3
  - Topic: Sum and difference identities: Problem type 4
  - Topic: Proving trigonometric identities using sum and difference properties: Problem type 1
  - Topic: Proving trigonometric identities using sum and difference properties: Problem type 2

Due Monday, September 28th at 11:59pm

- Section 4.6
  - Topic: Domains and ranges of trigonometric functions
  - Topic: Sketching the graph of a secant or cosecant function: Problem type 1
  - Topic: Sketching the graph of a secant or cosecant function: Problem type 2
  - Topic: Sketching the graph of a tangent or cotangent function: Problem type 1
  - Topic: Sketching the graph of a tangent or cotangent function: Problem type 2

Due Monday, September 21st at 11:59pm

- Section 4.5
  - Topic: Sketching the graph of y= a sin(x) or y= a cos(x)
  - Topic: Sketching the graph of y= sin(bx) or y= cos(bx)
  - Topic: Sketching the graph of y= sin(x)+ d or y= cos(x)+ d
  - Topic: Sketching the graph of y= sin(x+c) or y= cos(x+c)
  - Topic: Sketching the graph of y= a sin(x+c) or y= a cos(x+c)
  - Topic: Sketching the graph of y= a sin(bx) or y= a cos(bx)
  - Topic: Sketching the graph of y= a sin(bx+c) or y= a cos(bx+c)
  - Topic: Sketching the graph of y= a sin(bx)+ d or y= a cos(bx)+ d
  - Topic: Amplitude and period of sine and cosine functions
  - Topic: Amplitude, period, and phase shift of sine and cosine functions

Due Monday, September 14th at 11:59pm

- Section 4.3
  - Topic: Using a calculator to approximate sine, cosine, and tangent values
  - Topic: Using a calculator to approximate cosecant, secand, and cotangent values
  - Topic: Sine, cosine, and tangent ratios: Numbers of side lengths
  - Topic: Using the Pythagorean Theorem to find a trigonometric ratio
  - Topic: Finding trigonometric ratios given a right triangle
  - Topic: Using a trigonometric ratio to find a side length in a right triangle
  - Topic: Using cofunction identities
- Section 4.4
  - Topic: Reference angles: Problem type 1
  - Topic: Reference angles: Problem type 2
  - Topic: Determining the location of a terminal point given the signs of trigonometric values
  - Topic: Finding values of trigonometric functions given information about an angle: Problem type 1
  - Topic: Finding values of trigonometric functions given information about an angle: Problem type 2
  - Topic: Finding values of trigonometric functions given information about an angle: Problem type 3
  - Topic: Finding values of trigonometric functions given information about an angle: Problem type 4

Due Monday, September 7th at 11:59pm

- Section 4.1
  - Topic: Converting between degrees and radian measure: Problem type 1
  - Topic: Converting between degree and radian measure: Problem type 2
  - Topic: Sketching an angle in standard position
  - Topic: Coterminal angles
  - Topic: Arc length and central angle measure
- Section 4.2
  - Topic: Finding coordinates on the unit circle for special angles
  - Topic: Trigonometric functions and special angles; Problem type 1
  - Topic: Finding trigonometric ratios from a point on the unit circle
  - Topic: Trigonometric functions and special angles; Problem type 2
  - Topic: Trigonometric functions and special angles: Problem type 3
  - Topic: Evaluating expressions involving sine and cosine
  - Topic: Even and odd properties of trigonometric functions