

## MATH 141 HW 12 (6495681)

Due: Mon Oct 27 2014 11:59 PM EDT

Question

[1](#) [2](#) [3](#) [4](#) [5](#) [6](#) [7](#) [8](#) [9](#) [10](#)

## 1. Question Details

SCalcET6 3.9.011. [1816360]

A plane flying horizontally at an altitude of 2 mi and a speed of 490 mi/h passes directly over a radar station. Find the rate at which the distance from the plane to the station is increasing when it is 5 mi away from the station. (Round your answer to the nearest whole number.)

  449 mi/h

## 2. Question Details

SCalcET6 3.9.014. [632582]

At 3 P.M., ship A is 150 km west of ship B. Ship A is sailing east at 35 km/h and ship B is sailing north at 25 km/h. How fast is the distance between the ships changing at 7 P.M.? (Round your answer to one decimal place.)

  21.4 km/h

## 3. Question Details

SCalcET6 3.9.015.MI. [1386495]

Two cars start moving from the same point. One travels south at 48 mi/h and the other travels west at 20 mi/h. At what rate is the distance between the cars increasing one hour later?

  52 mi/h

## 4. Question Details

SCalcET6 3.9.016.MI. [1387878]

A spotlight on the ground shines on a wall 12 m away. If a man 2 m tall walks from the spotlight toward the building at a speed of 1.3 m/s, how fast is the length of his shadow on the building decreasing when he is 4 m from the building? (Round your answer to two decimal places.)

  0.49 m/s

## 5. Question Details

SCalcET6 3.9.017. [1817365]

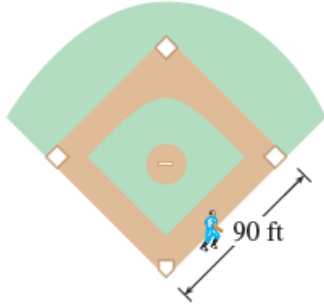
A man starts walking north at 4 ft/s from a point  $P$ . Five minutes later a woman starts walking south at 5 ft/s from a point 500 ft due east of  $P$ . At what rate are the people moving apart 15 min after the woman starts walking? (Round your answer to two decimal places.)

  8.99 ft/s

## 6. Question Details

was SCalcET6 3.9.018. [1898759]

A baseball diamond is a square with side 90 ft. A batter hits the ball and runs toward first base with a speed of 25 ft/s.



(a) At what rate is his distance from second base decreasing when he is halfway to first base? (Round your answer to one decimal place.)

11.2 ft/s

(b) At what rate is his distance from third base increasing at the same moment? (Round your answer to one decimal place.)

11.2 ft/s

## 7. Question Details

SCalcET6 3.9.020.MI. [1387922]

A boat is pulled into a dock by a rope attached to the bow of the boat and passing through a pulley on the dock that is 1 m higher than the bow of the boat. If the rope is pulled in at a rate of 1 m/s, how fast is the boat approaching the dock when it is 7 m from the dock? (Round your answer to two decimal places.)

1.01 m/s



## 8. Question Details

SCalcET6 3.9.021. [1816962]

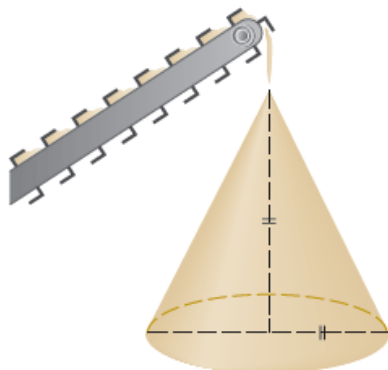
At noon, ship A is 100 km west of ship B. Ship A is sailing south at 25 km/h and ship B is sailing north at 35 km/h. How fast is the distance between the ships changing at 4:00 PM? (Round your answer to one decimal place.)

55.4 km/h

## 9. Question Details

SCalcET6 3.9.027. [1816417]

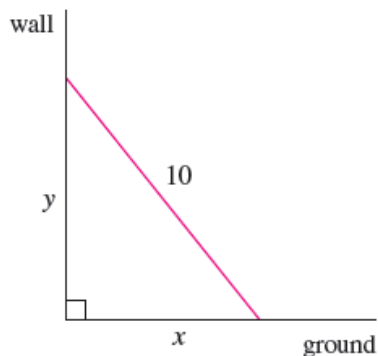
Gravel is being dumped from a conveyor belt at a rate of  $40 \text{ ft}^3/\text{min}$ , and its coarseness is such that it forms a pile in the shape of a cone whose base diameter and height are always equal. How fast is the height of the pile increasing when the pile is  $13 \text{ ft}$  high? (Round your answer to two decimal places.)

   $0.30 \text{ ft/min}$ 


## 10. Question Details

SCalcET6 3.9.030. [1816566]

A ladder  $10 \text{ ft}$  long rests against a vertical wall. If the bottom of the ladder slides away from the wall at a rate of  $0.8 \text{ ft/s}$ , how fast is the angle between the ladder and the ground changing when the bottom of the ladder is  $8 \text{ ft}$  from the wall?

   $-2/15 \text{ rad/s}$ 


## Assignment Details

Name (AID): **MATH 141 HW 12 (6495681)**Submissions Allowed: **100**Category: **Homework**

Code:

Locked: **No**Author: **Blanco-Silva, Francisco** ( [blanco@math.sc.edu](mailto:blanco@math.sc.edu) )Last Saved: **Oct 22, 2014 08:45 AM EDT**Permission: **Protected**Randomization: **Person**Which graded: **Last**

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