

Calculus II - Monday, August 25, 2014 - Mr. Clontz  
Fill in the circle for the correct answer for each of the following problems.

Name: \_\_\_\_\_ 9am / 10am

1. (10 points) Which of these is an example of propositions  $P$ ,  $Q$  such that  $P \Rightarrow Q$ , but  $Q \not\Rightarrow P$ ?

- ☐  $P$ : " $x^3 = -8$ "       $Q$ : " $x = -2$ "
- ☐  $P$ : "The hat is orange."       $Q$ : "The hat is blue."
- ☒  $P$ : " $z = -4$ "       $Q$ : " $z^2 = 16$ "
- ☐  $P$ : "The cat's fur is not black."       $Q$ : "The cat has white fur."
- ☐ None of the above.

2. (10 points) Determine whether the sequence  $\left(\frac{n}{\sqrt{10+n}}\right)$  is convergent or divergent. If it is convergent, what does it converge to?

- ☐ The sequence converges to  $\frac{1}{\sqrt{10}}$ .
- ☐ The sequence converges to  $\sqrt{n}$ .
- ☐ The sequence converges to 1.
- ☒ **The sequence diverges.**
- ☐ None of the above.