PROBLEM OF THE WEEK #8

(Fall 2016)

Evaluate:

$$\lim_{n\to\infty}\left[\frac{1}{\sqrt{n^2+1}}+\frac{1}{\sqrt{n^2+4}}+\frac{1}{\sqrt{n^2+9}}+\frac{1}{\sqrt{n^2+16}}+\cdots+\frac{1}{\sqrt{n^2+n^2}}\right].$$

[Please fully explain your answer.]

Solutions should be submitted to Cinda Furry, in Gardner Hall 435, by 4:00 P.M. on Wednesday, November 9, 2016.

Every week, the best solution submitted earns a \$10 Platteville gift certificate; the top scorer each semester also wins a cash award. Good luck!

You can always see the Problem of the Week (and complete rules) online at:

`http://www.uwplatt.edu/mathematics/problem-week`