In-Class Quiz 2:
Functions of several variables (§12.1-12.2)

Directions: This quiz is due at the end of lecture.

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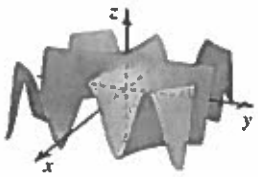
1. Match functions (a)-(d) with surfaces (A)-(D).

   (a) $f(x,y) = \dfrac{6}{x-y}$ ← undefined when $x=y$

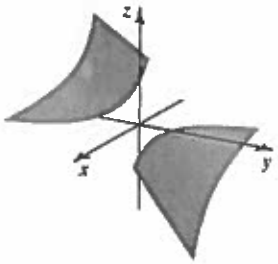
   (b) $g(x,y) = \ln(x^2+y^2)$

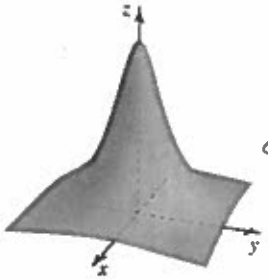
   (c) $h(x,y) = \dfrac{1}{1+x^2+y^2}$ ← always positive

   (d) $p(x,y) = \cos xy$

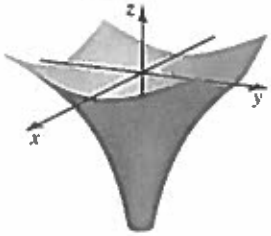
(d) (A) 

← oscillates

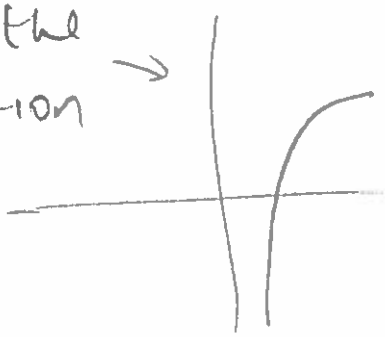
(a) (B) 

(c) (C) 

← always positive

(b) (D) 

← has the shape of the natural log function →



2. To which coordinate axes are the following cylinders parallel in $\mathbb{R}^3$?

   (a) $3z^2 + 2y^2 = 9$ x-axis

   (b) $x^2 + y^2 = 9$ z-axis

   (c) $x^2 + z^2 = 9$ y-axis

(In all three equations, one variable is completely free.)