

This print-out should have 6 questions. Multiple-choice questions may continue on the next column or page – find all choices before answering.

001 10.0 points

Find the domain of the function

$$f(x, y) = \ln(7 - x^2 - 8y^2).$$

1. $\left\{ (x, y) : \frac{1}{8}x^2 + \frac{1}{7}y^2 > 1 \right\}$
2. $\left\{ (x, y) : \frac{1}{8}x^2 + \frac{1}{7}y^2 < 1 \right\}$
3. $\left\{ (x, y) : \frac{1}{7}x^2 + \frac{8}{7}y^2 \leq 1 \right\}$
4. $\left\{ (x, y) : \frac{1}{8}x^2 + \frac{1}{7}y^2 \leq 1 \right\}$
5. $\left\{ (x, y) : \frac{1}{7}x^2 + \frac{8}{7}y^2 > 1 \right\}$
6. $\left\{ (x, y) : \frac{1}{7}x^2 + \frac{8}{7}y^2 < 1 \right\}$

002 10.0 points

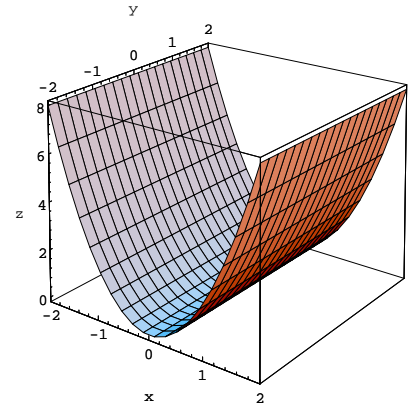
Find the domain of the function

$$f(x, y) = \sqrt{x^2 + 4y^2 - 6}.$$

1. $\left\{ (x, y) : \frac{1}{6}x^2 + \frac{2}{3}y^2 < 1 \right\}$
2. $\left\{ (x, y) : \frac{1}{4}x^2 + \frac{1}{6}y^2 > 1 \right\}$
3. $\left\{ (x, y) : \frac{1}{6}x^2 + \frac{2}{3}y^2 \geq 1 \right\}$
4. $\left\{ (x, y) : \frac{1}{6}x^2 + \frac{2}{3}y^2 > 1 \right\}$
5. $\left\{ (x, y) : \frac{1}{4}x^2 + \frac{1}{6}y^2 < 1 \right\}$
6. $\left\{ (x, y) : \frac{1}{4}x^2 + \frac{1}{6}y^2 \geq 1 \right\}$

003 10.0 points

Which one of the following functions has



as its graph.

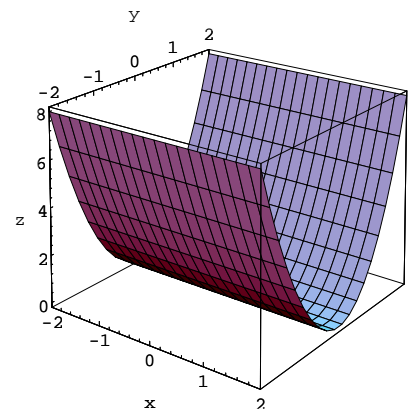
1. $f(x, y) = y^2 - x^2$
2. $f(x, y) = \frac{1}{2}(x^2 + y^2)$
3. $f(x, y) = 2x^2$
4. $f(x, y) = \frac{1}{2}(8 - x^2 - y^2)$
5. $f(x, y) = 2y^2$

004 10.0 points

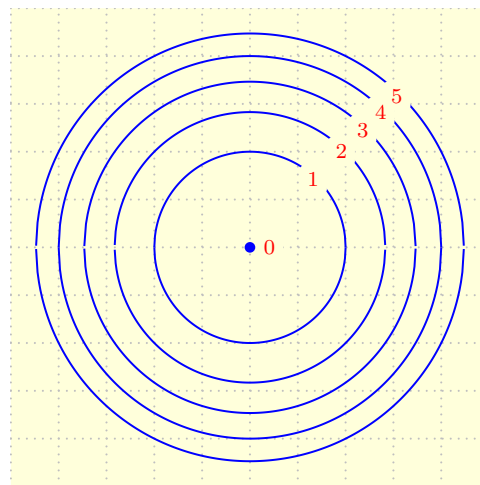
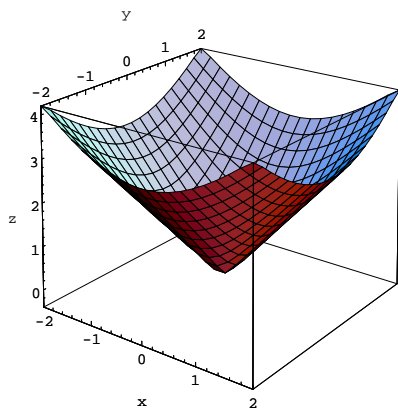
Which one of the following surfaces is the graph of

$$f(x, y) = y^2 - x^2 ?$$

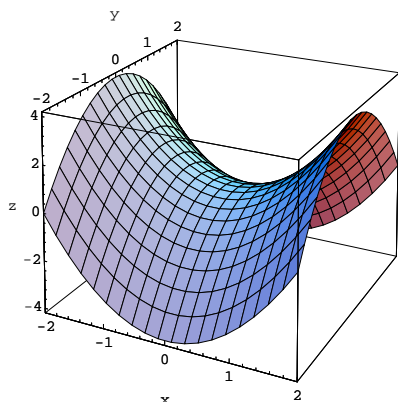
1.



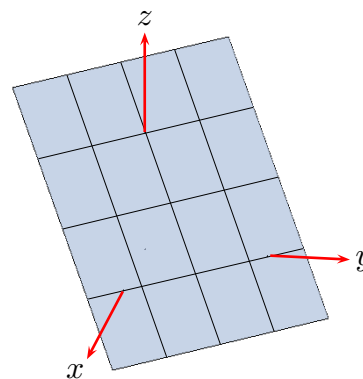
2.



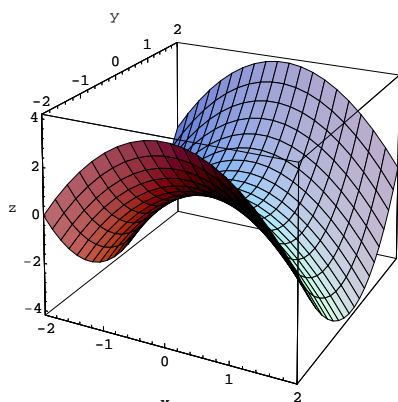
3.



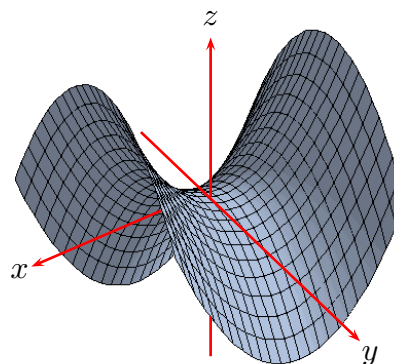
1.



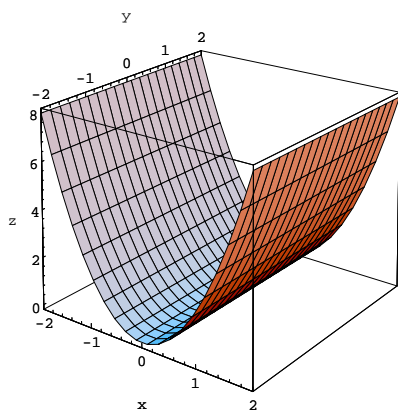
4.



2.



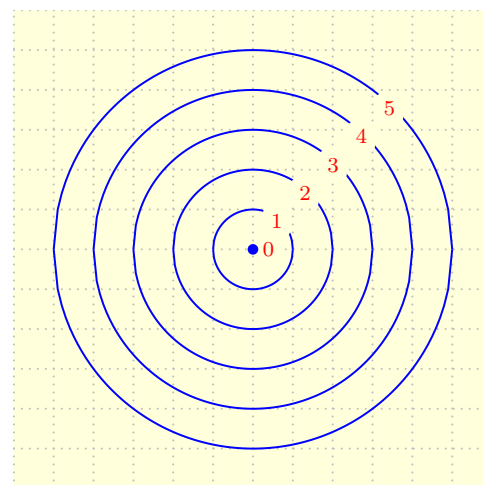
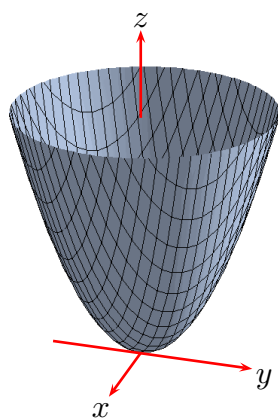
5.



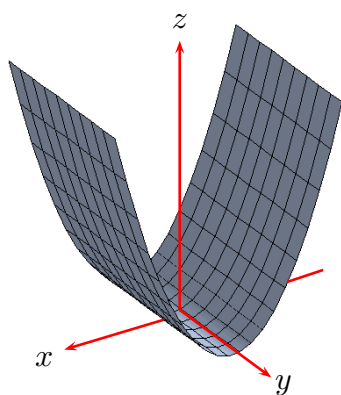
005 10.0 points

Which of the following surfaces could have contour map

3.

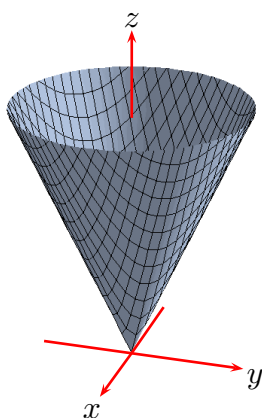


4.



1. parabolic cylinder
2. plane
3. hyperbolic paraboloid
4. cone
5. paraboloid

5.



006 10.0 points

Which of the following surfaces could have contour map