



9. A square has vertices at (0, 0), (1, 0), (1, 1) and (0, 1). Graphs of the following equations are drawn on the same set of axes as the square.

$$x^{2} + y^{2} = 1$$
,  $y = x + 1$ ,  $y = -x^{2} + 1$ ,  $y = x$ ,  $y = \frac{1}{x}$ 

How many of the graphs pass through exactly two of the vertices of the square?

A 1

B 2

C 3

D 4

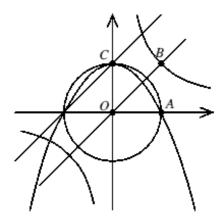
E 5

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9. C Let O = (0,0), A = (1,0), B = (1,1), C = (0,1) be the vertices of the square. The equation x² + y² = 1 gives a circle passing through A and C. The equation y = x + 1 gives a straight line passing only through C. The equation y = -x² + 1 gives a parabola passing through A and C. The equation y = x gives a straight line passing through O and B. The equation y = ½ gives a rectangular hyperbola which has two branches and passes only through B.
So, only x² + y² = 1, y = x and y = -x² + 1
here example passing through are easily true of the past.



have graphs passing through exactly two of the vertices of the square.