

33 $z = \frac{1}{x^2 + 4y^2}$ graph F

1pt.

if we set $x=0$, then $z = \frac{1}{4y^2}$

if we set $y=0$, then $z = \frac{1}{x^2}$

} both of these conditions correspond to graph F as we see z becoming very large as either x or y approaches zero, and small as x or y approaches ∞ ; also, the graph is positive for all values of x and y

34 $z = x^3 - 3xy^2$

1pt.

if we set $x=0$, then $z=0$

if we set $y=0$, then $z=x^3$

if we set $x=1$, then $z=1-3y^2$

if we set $x=-1$, then $z=3y^2-1$

} these conditions correspond to graph A since we see a parabolic shape of the cross-section when x is held constant, with upward concavity for $x < 0$ and downward concavity for $x > 0$; also, we see cubic shape of the cross-section when $y=0$