1.(1 pt) Suppose r varies directly with t and that $r = 9$ when $t = 3$. What is the value of r when $t = 11$?
$r =$ _____

2.(1 pt) Suppose p varies directly with q and that $p = 40$ when $q = 10$. What is the value of p when $q = 6$?
$p =$ _____

3.(1 pt) Suppose z varies inversely with t and that $z = 18$ when $t = 10$. What is the value of z when $t = 6$?
$z =$ _____

4.(1 pt) Suppose f varies inversely with g and that $f = 35$ when $g = 2$. What is the value of f when $g = 7$?
$f =$ _____

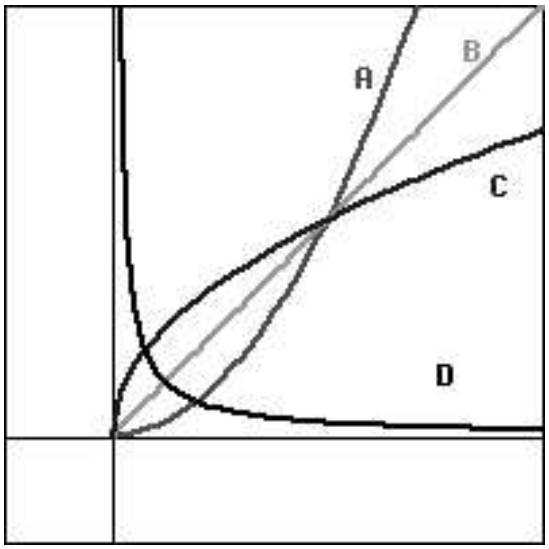
5.(1 pt) Suppose z varies directly with x and inversely with the square of y. If $z = 12$ when $x = 4$ and $y = 1$, what is z when $x = 12$ and $y = 9$?
$z =$ _____

6.(1 pt) Suppose z varies directly with y and directly with the cube of x. If $z = 96$ when $x = 2$ and $y = 6$, what is z when $x = 7$ and $y = 2$?
$z =$ _____

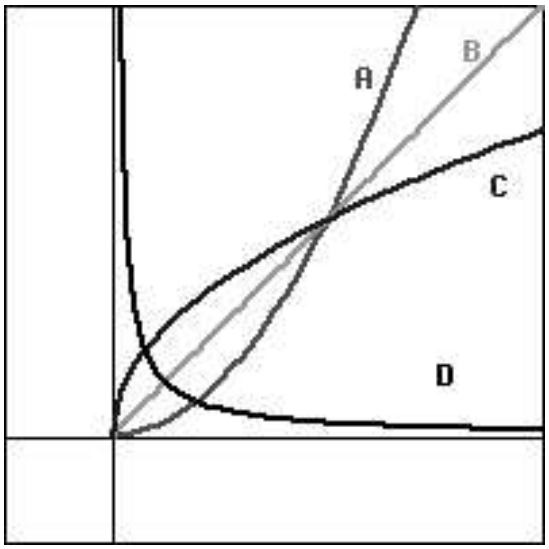
7.(1 pt) Match each equation with the way in which r varies with respect to t in that equation.
IMPORTANT!! You only have 3 attempts to get this problem right!

__ 1. $25rs^4vt^2 = 100$
__ 2. $18 = \frac{4r^2}{v^3s^2t}$
__ 3. $ts^2r^3 = 48v^2$
__ 4. $4rs^3 = kvt$
__ 5. $\frac{3r}{t^3} = v^2s$
__ 6. $\frac{st^2}{8r} = 2vs$

A. directly with the square of t
B. inversely with the cube root of t
C. directly with the cube of t
D. inversely with the square of t
E. directly with t
F. directly with the square root of t



8.(1 pt)
For each power function, choose (by letter) the graph which most closely resembles the graph of that function. You may always assume that the constant of variation k is positive.
Warning: You have only 4 attempts at this problem so make them count!
$y = kx^{\frac{2}{5}}$ _____ $y = kx^{\frac{3}{8}}$ _____
$y = kx^{4.95}$ _____ $y = kx^{\frac{7}{3}}$ _____
$y = kx$ _____ $y = \frac{k}{x^{\frac{3}{8}}}$ _____



9.(1 pt)
For each power function, choose (by letter) the graph which most closely resembles the graph of that function. You may always assume that the constant of variation k is positive.
Warning: You have only 4 attempts at this problem so make them count!
$y = kx$ _____ $y = kx^{.55}$ _____
$y = \frac{k}{x}$ _____ $y = kx^3$ _____
$y = \frac{k}{x^{\frac{2}{5}}}$ _____ $y = kx^{.70}$ _____