Mathematics 122

Quiz # 2 Name: Key

You must show your work to get full credit.

1. If you are to find q as a function of p

Which is the independent variable? p

Which is the dependent variable? q

Do we solve for p or q? That is is the problem asking for $p = f(q)$ or $q = f(p)$? $q = f(p)$

1

2. The following table describes a linear function.

r	10	15	20
A	20	24	28

(a) Find a A as function of r.

$\frac{A-20}{r-10} = \frac{24-20}{15-10} = \frac{4}{5}$

$A = .8(r-10)+20$

$= .8r + 12$

$= \frac{4}{5}r + 12$

$A = .8r + 12$

$.8(15)+12$

$= \frac{4}{5}(\frac{3}{1})+12 = 12+12 = 24$

(b) If $A = 52$, what is r? $r =$ 50

$52 = .8r + 12$

$.8r = 40$

$r = \frac{40}{.8} = 50$

2

3. The following table gives gives values for an exponential function $P(t) = P_0 a^t$

t	0	1	2	3
P	4.2000	3.3600	2.6880	2.1504

(a) What is P_0 $= P(0) = 4.2$ $P_0 =$ 4.2

(b) What is a? $= \frac{P(t+1)}{P(t)} = \frac{3.3600}{4.2000} = .8$ $a =$ .8

2

(c) Give a formula for $P(t)$ $= P_0 a^t$ $P(t) =$ $4.2(.8)^t$

(d) When does P become .1? $t =$ 16.75

$4.2(.8)^t = .1$

$(.8)^t = .1/4.2$

$t = \ln(.1/4.2)/\ln(.8)$