

Quiz #4
ECO 3401
Dr. Gerking

Key

Directions:

Bubble in the correct answer to each question on your BROWN scan-tron sheet. Write your name LEGIBLY on the scan-tron sheet, then find your form code at the top right corner of this page. Write the form code on your scan-tron sheet. You will turn in the scan-tron sheet, and keep this quiz sheet for your records.

Solve the following:

1. Suppose the weekly supply function for a pound of house-blend coffee at a local coffee shop is $p = \frac{q}{48}$, where q is the number of pounds of coffee supplied per week.

How many pounds of coffee per week will be supplied if the price is \$8.39 a pound?

- (a) 400.52 pounds
(b) 10.93 pounds
(c) 402.72 pounds
(d) 882.72 pounds
(e) None of these

The function can be written as
 $q = 48p$
@ \$8.39/pound, will supply
 $q = 48(8.39) = 402.72$
pounds/week

2. In manufacturing a component for a machine, the initial cost of a die is \$750 and all other additional costs are \$5 per unit produced. How many units are produced if total cost is \$1,800?

- (a) 510 units
(b) 210 units
(c) 360 units
(d) 200 units
(e) None of these

$$1800 = 750 + 5x$$
$$1050 = 5x$$
$$210 = x$$

3. If $F(t) = t^2 + 7t + 1$ and $G(t) = \frac{2}{t-1}$, find $G(F(t))$.

- (a) $= \frac{4}{(t-1)^2} + \frac{14}{t-1} + 1$
(b) $= \frac{2}{t^2 + 7t}$
(c) $= \frac{2}{t}$
(d) $= t^2 + 7t$
(e) None of these

$$G(F(t)) = G(t^2 + 7t + 1)$$
$$= \frac{2}{(t^2 + 7t + 1) - 1}$$
$$= \frac{2}{t^2 + 7t}$$

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Solve the following:

1. Suppose the weekly supply function for a pound of house-blend coffee at a local coffee shop is $p = \frac{q}{48}$, where q is the number of pounds of coffee supplied per week. How many pounds of coffee per week will be supplied if the price is \$19.49 a pound?

- (a) 950.52 pounds
(b) 935.52 pounds
(c) 402.72 pounds
(d) 882.72 pounds
(e) None of these

The function can be written as
 $q = 48p$
 @ \$19.49/pound, will supply
 $q = 48(19.49) = 935.52$
 pounds/week

2. In manufacturing a component for a machine, the initial cost of a die is \$850 and all other additional costs are \$5 per unit produced. How many units are produced if total cost is \$1,500?

- (a) 120 units
(b) 210 units
(c) 170 units
(d) 130 units
(e) None of these

$1500 = 850 + 5x$
 650
 $130 = x$

3. If $F(t) = t^2 + 7t + 1$ and $G(t) = \frac{2}{t-1}$, find $F(G(t))$.

- (a) $\frac{4}{(t-1)^2} + \frac{14}{t-1}$
 (b) $\frac{2}{t^2 + 7t}$
 (c) $\frac{2}{t}$
 (d) $t^2 + 7t$
 (e) None of these

$F(G(t)) = F\left[\frac{2}{t-1}\right]$
 $= \left[\frac{2}{t-1}\right]^2 + 7\left[\frac{2}{t-1}\right] + 1$
 $= \frac{4}{(t-1)^2} + \frac{14}{t-1} + 1$