

### EXAMINATION #3 ANSWER KEY

#### Version A

#### I. MULTIPLE CHOICE

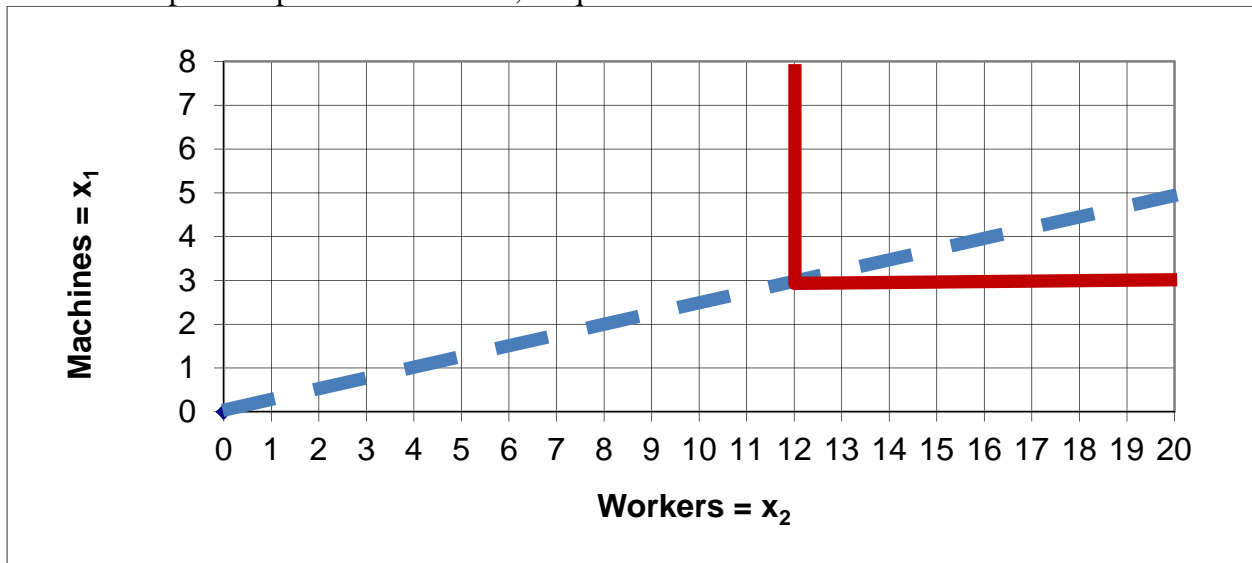
(1)b. (2)b. (3)c. (4)a. (5)b. (6)a. (7)c. (8)b. (9)c. (10)e. (11)d. (12)c. (13)b.

#### II. SHORT ANSWER

- (1) a. 2%                      b. 1%.  
 (2) a. 50 units                b. \$15.  
 (3) a. 0 units                b. 1000 units    c. 800 units      d. \$8                      e. \$3.  
 (4) a. 6 million pounds                b. excess demand                      c. 3 million pounds  
       d. decrease                              e. \$7 million                              f. increase  
       g. \$4 million                              h. \$3 million.  
 (5) a. 5 million gallons                b. \$6                                      c. \$3  
       d. decrease                              e. \$12 million                              f. decrease  
       g. \$6 million                              h. \$15 million                              i. \$3 million

#### III. PROBLEMS

- (1) a.  $x_1 = (1/4) x_2$  .                      b.  $q = 20 x_1$                               c.  $q = 5 x_2$   
       d.  $q = \min\{20 x_1, 5 x_2\}$ .  
       e. Expansion path is dashed line; isoquant is solid line.



- (2) a.  $100 = 2 x_1^{1/2} x_2^{1/2}$                       b.  $MRSP = x_1 / x_2$                               c.  $x_1^*=25, x_2^*=100$   
       d.  $TC(100) = \$3000$ .  
 (3) a. 90 units                              b. \$6                                      c. export  
       d. 60 units                              e. decrease                              f. \$160

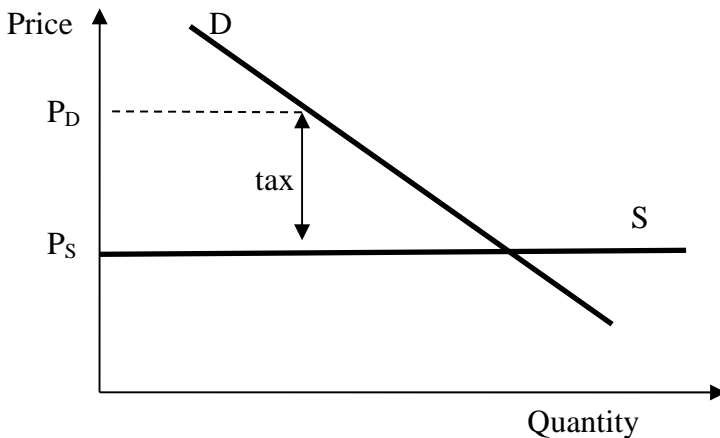
g. increase  
 j. \$60.

h. \$220

i. increase

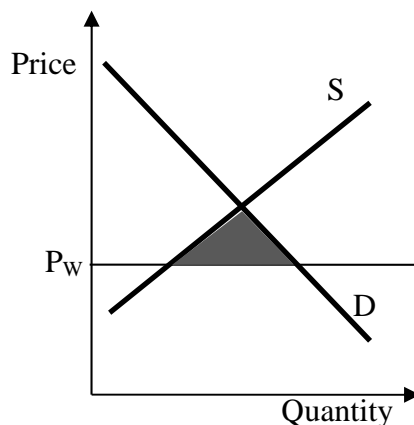
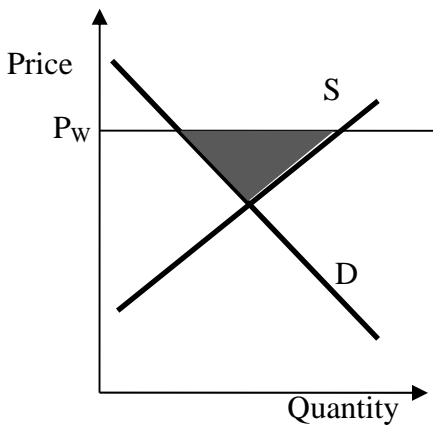
#### IV. CRITICAL THINKING

(1) If supply is perfectly elastic, the supply curve is horizontal. In this situation, a tax raises the total price (including the tax) paid by buyers, but has no effect on the net price (excluding the tax) received by manufacturers. Also, consumer surplus is reduced by the tax, but producer surplus is still zero and unchanged as a result of the tax. So buyers bear the entire burden of the tax. See graph below.



(2) One should *disagree* with this statement. If the world price is *greater* than the domestic price, then domestic consumers lose from international trade, but producers win. The increase in producer surplus is greater than the decrease in consumer surplus, so the country is better off from international trade. Gains from trade are shaded in the graph below at left.

Moreover, if the world price is *less* than the domestic price, then domestic consumers win from international trade, but producers lose. However, the increase in consumer surplus is greater than the decrease in producer surplus, so the country is again better off from international trade. See graphs below. Gains from trade are shaded in the graph below at right.



**Version B**

**I. MULTIPLE CHOICE**

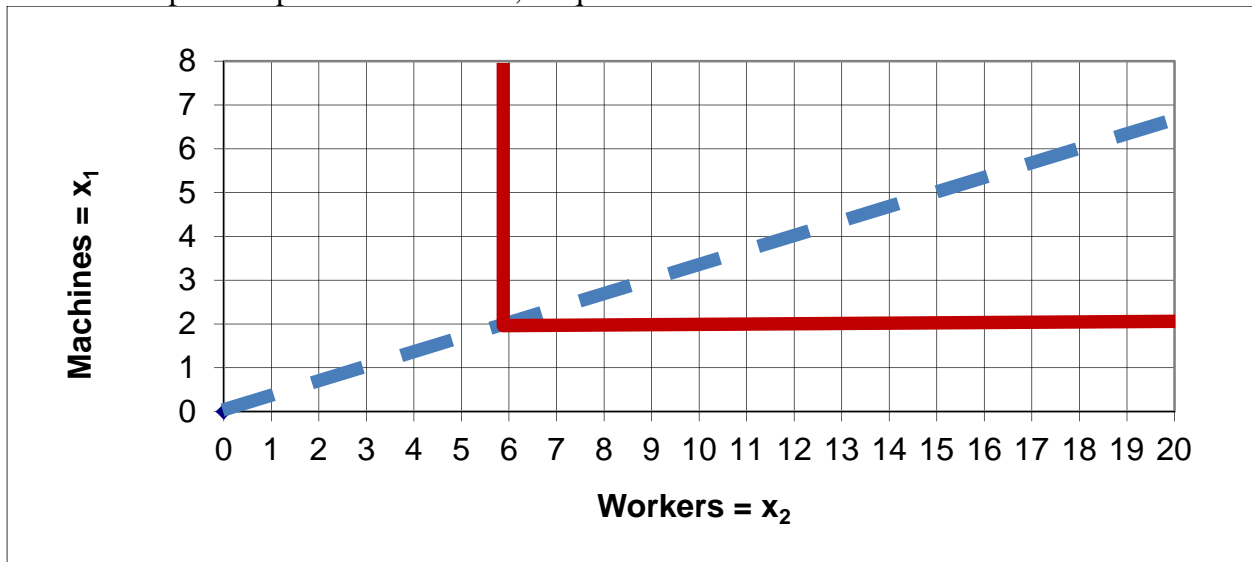
- (1)a. (2)a. (3)b. (4)b. (5)d. (6)b. (7)b. (8)a. (9)d. (10)b. (11)a. (12)d. (13)c.

**II. SHORT ANSWER**

- (1) a. 1.9% b. 1.6%.  
 (2) a. 30 units b. \$70.  
 (3) a. 1000 units b. 0 units c. 1200 units d. \$5 e. \$2.  
 (4) a. 6 million pounds b. excess supply c. 6 million pounds  
 d. increase e. \$11 million f. decrease  
 g. \$14 million h. \$3 million.  
 (5) a. 3 million gallons b. \$8 c. \$2  
 d. decrease e. \$20 million f. decrease  
 g. \$10 million h. \$18 million i. \$12 million

**III. PROBLEMS**

- (1) a.  $x_1 = (1/3) x_2$  . b.  $q = 10 x_1$  c.  $q = (10/3) x_2$   
 d.  $q = \min\{10 x_1, (10/3) x_2\}$ .  
 e. Expansion path is dashed line; isoquant is solid line.



- (2) a.  $75 = 5 x_1^{1/2} x_2^{1/2}$  b.  $MRSP = x_1 / x_2$  c.  $x_1^*=9, x_2^*=25$   
 d.  $TC(75) = \$900$ .  
 (3) a. 90 units b. \$6 c. import  
 d. 90 units e. increase f. \$315  
 g. decrease h. \$180 i. increase  
 j. \$135.

**IV. CRITICAL THINKING:** Same as Version A.

**Version C**

**I. MULTIPLE CHOICE**

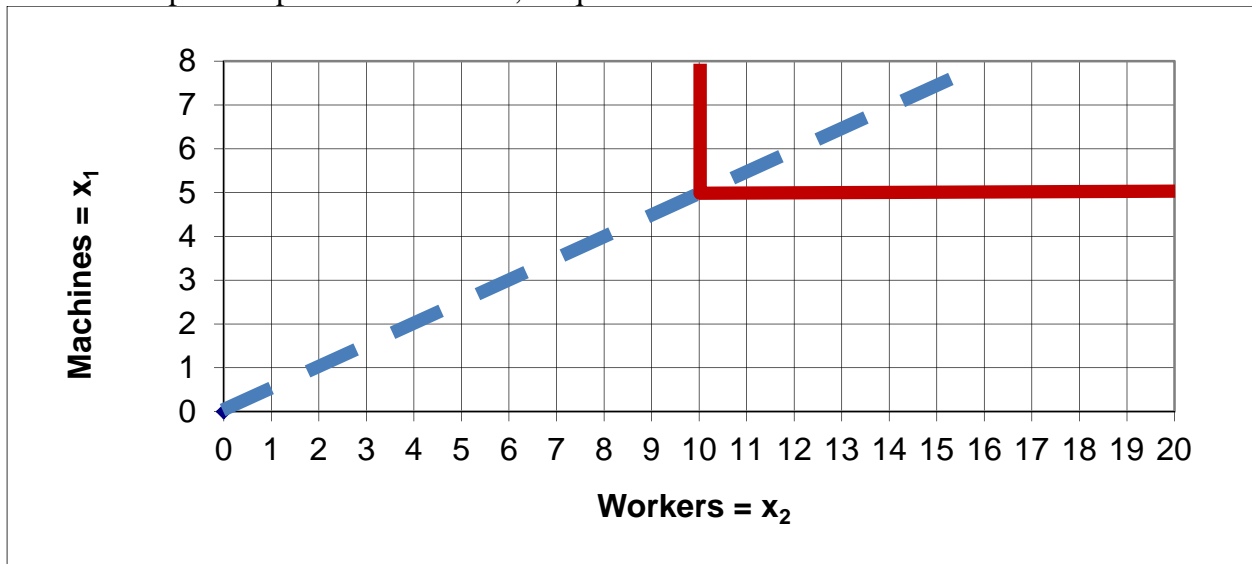
- (1)c. (2)b. (3)d. (4)c. (5)a. (6)c. (7)e. (8)a. (9)a. (10)e. (11)d. (12)b. (13)b.

**II. SHORT ANSWER**

- (1) a. 1.8% b. 2.2%.  
 (2) a. 100 units b. \$80.  
 (3) a. 0 units b. 800 units c. 600 units d. \$10 e. \$5.  
 (4) a. 4 million pounds b. excess demand c. 3 million pounds  
 d. decrease e. \$5 million f. increase  
 g. \$2 million h. \$3 million.  
 (5) a. 9 million gallons b. \$2 c. \$5  
 d. increase e. \$16 million f. increase  
 g. \$8 million h. \$27 million i. \$3 million

**III. PROBLEMS**

- (1) a.  $x_1 = (1/2) x_2$  . b.  $q = 100 x_1$  c.  $q = 50 x_2$   
 d.  $q = \min\{100 x_1, 50 x_2\}$ .  
 e. Expansion path is dashed line; isoquant is solid line.



- (2) a.  $100 = 10 x_1^{1/2} x_2^{1/2}$  b.  $MRSP = x_1 / x_2$  c.  $x_1^*=4, x_2^*=25$   
 d.  $TC(100) = \$400$ .  
 (3) a. 90 units b. \$6 c. export  
 d. 30 units e. decrease f. \$85  
 g. increase h. \$100 i. increase  
 j. \$15.

**IV. CRITICAL THINKING:** Same as Version A.

[end of answer key]