The following formula might be useful: $E_p = (P/Q)*(1/slope)$

20 Multiple Choice Questions (2.5 pts each)

1. The price consumption curve tells us the change in
   A) the optimal bundles as prices change.
   B) income needed to obtain the same indifference curve.
   C) prices that one can expect given a change in consumption.
   D) prices after an income change.

2. The cross-price elasticity of demand for substitutes is
   A) positive.
   B) negative.
   C) zero.
   D) infinity.

3. Price elasticity of demand is
   A) the percentage change in quantity demanded divided by the percentage change in price.
   B) the change in price divided by the change in quantity.
   C) the change in quantity divided by the change in price.
   D) the percentage change in price divided by the percentage change in quantity.

4. The income elasticity of demand for flour is –0.36. Therefore, flour is
   A) a normal good.
   B) an inferior good.
   C) a luxury good.
   D) a necessary good.

5. Given these two individual demand curves: $P = 100 - 5Q$ & $P = 100 - \dfrac{10}{3}Q$, what is the equation for

   the market demand curve?

   A) $P = 100 - 2Q$
   B) $P = 200 - 8.33Q$
   C) $P = 100 - 8.33Q$
   D) $P = 100 - .5Q$
   E) none of the above is true.

6. An Engel curve
   A) shows optimal consumption bundles as income changes
   B) shows optimal consumption bundles as taxes change
   C) shows optimal consumption bundles as price changes
   D) shows optimal consumption bundle of good X as the price of good Y changes.

7. If the consumer is willing to give up 3 units of food (vertical axis) in exchange for one unit of shelter (horizontal axis) and food is priced at 10 and shelter at 20, then the marginal rate of substitute is:
   A) 3/10
   B) 1/3
   C) 1/2
   D) 2
   E) 3

8. If the consumer is willing to give up 3 units of food (vertical axis) in exchange for one unit of shelter (horizontal axis) and food is priced at 10 and shelter at 20, then the slope of the budget constraint is
   A) -3/10
   B) -1/3
   C) -1/2
   D) -2
   E) -3

9. If the consumer is willing to give up 3 units of food (vertical axis) in exchange for one unit of shelter (horizontal axis) and food is priced at 10 and shelter at 20, then the consumer should
   A) buy more shelter and less food.
   B) buy more food and less shelter.
   C) not change her consumption since she is already consuming the optimal bundle.

10. An increase in income with no changes in the price of either good will cause
    A) an inward shift of the budget curve.
    B) an outward shift of the budget curve.
    C) no change in the budget curve.
    D) none of the above.

11. The income elasticity of demand for beer is 0.27. What does this mean in words?
    A) as quantity demanded increases by 0.27, income increases by $1
    B) as quantity demanded increases by 0.27, income increases by 1%.
    C) as income increases by $1, quantity demanded increases by 0.27.
    D) as income increases by 1%, quantity demanded increases by 0.27%.
    E) as quantity demanded increases by 1%, income increases by 0.27%.

12. If a consumer has the following budget constraint: $200 = 2H + 10B$ where H is hamburgers and B is 12-packs of beer, how many hamburgers can she buy if she purchases two 12-packs of beer?
    A) 100   B) 110   C) 20   D) 9   E) none of the above

13. This year in the NFL: the New England Patriots beat the Kansas City Chiefs. The Kansas City Chiefs beat the Miami Dolphins. And Miami Dolphins beat the New England Patriots. This example violates which of the assumptions we make about preferences?

A) Completeness
B) Concavity
C) Convexity
D) More-is-better
E) Transitivity

14. Which is true of the two budget constraints "a" and "b" drawn below for goods X and Y?
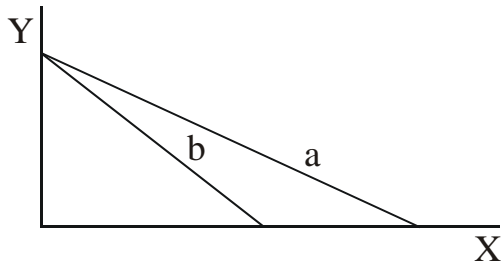
A) Income is higher for budget constraint "a" than budget constraint "b".
B) Income is higher for budget constraint "b" than budget constraint "a".
C) Income is the same for budget constraints "a" and "b".

15. On the graph below: income = $200, P_x = $4, and P_y = $2. What is the best affordable bundle?
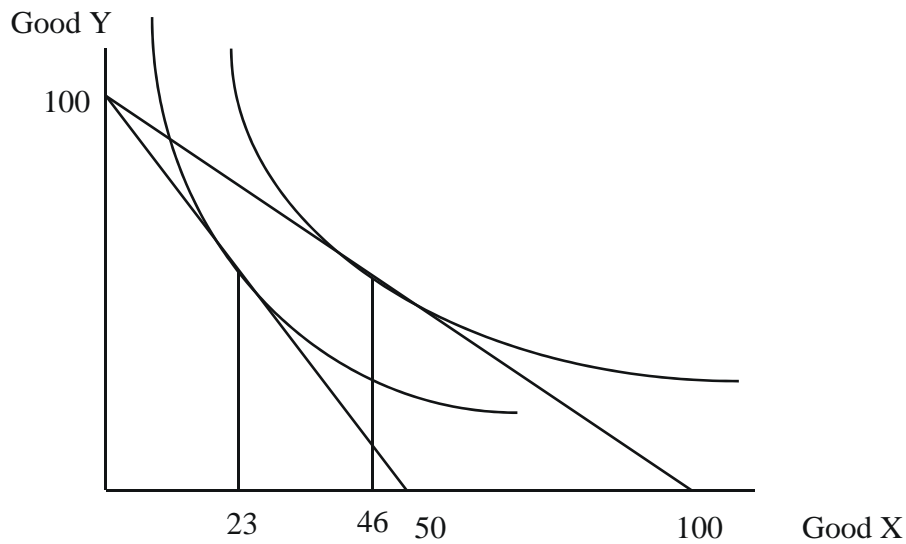
A) A
B) B
C) C
D) D
E) E

16. On the graph above, if the price of X falls to P_x = $2, what is the best affordable bundle?

A) A
B) B
C) C
D) D
E) E

17. (Using the graph from the previous page), the substitution effect due to the price of X decreasing is seen as the movement from point _____ to point _____.

    A) B to D
    B) D to B
    C) D to E
    D) A to E
    E) A to B

18. (Using the graph from the previous page), the income effect due to the price of X decreasing is seen as the movement from point _____ to point _____.

    A) D to B
    B) E to A
    C) E to D
    D) A to E
    E) B to D

19. An example of a good with perfectly elastic demand is:

    A) Coke
    B) Gasoline
    C) Milk
    D) Insulin
    E) 100 shares of IBM stock

20. Which of the following is likely to increase the price elasticity of demand for good x?
    A) an increase in income
    B) a change in price of good y
    C) a change in price of good x
    D) a longer period of time

Discussion Questions (50 points)

I. Sally has $100 to buy supplies for her computer. The two items that she needs are paper and ink jet cartridges. Paper costs $10 per 1,000 sheets and ink jet cartridges cost $5 each (10 points)

  A) Sketch Sally's budget line (label it "budget") with paper on the y-axis and cartridges on x-axis.

  B) What is the equation for the budget line that you sketched?

  C) Ink jet cartridges must be replaced after 2,000 sheets of paper. Using the graph from (A) draw in three indifference curves (labeled I_1, I_2, I_3 where I_3 is preferred to I_2 and I_2 is preferred to I_1).

  D) Find the optimal consumption bundle for Sally.

II.   Billie Joe views Exxon unleaded gasoline as a perfect substitute for Amoco unleaded gasoline (9 pts)
        A) Draw three indifference curves for Billie Joe (labeled I_1, I_2, I_3 where I_3 is preferred to I_2 and I_2 is preferred to I_1).

        B) Billie Joe has $100 in income to spend on Exxon and Amoco gasoline. The price of Exxon gasoline is $1.35 a gallon and Amoco is $1.33 a gallon. In your graph in (A), sketch the budget constraint and label it "budget".

        C) Find the optimal consumption bundle in your graph in (A) and label it "optimal".

III.   The market for cup cakes has 10 potential customers, each having an identical individual demand curve of: $P = 99 - 10Q_i$, where P is the price in dollars per cup cake and Q_i is the number of cup cakes demanded per week by the ith consumer. Find the market demand for cup cakes using algebra (show your work) (3 points)

IV. A hot dog vendor faces a daily demand curve of $Q = 1{,}800 - 15P$, where P is the price of a hot dog (in cents) and Q is the number of hot dogs purchased each day (16 points)

    a. If the vendor has been selling 300 hot dogs each day, how much revenue has he been collecting?

    b. What is the price elasticity of demand for hot dogs?

    c. In words, what does the number that you found for the price elasticity of demand in (B) mean? (don't just say "elastic" or "inelastic")

    d. What recommendation would you give to the hot dog vendor in order to increase revenue?

V.   At a price of $300, US Air sells 100 tickets from PGV (Pitt-Greenville Airport) to MIA (Miami) each week. If US Air offers a sale, it reduces the price to $200 and sells 150 tickets from PGV to MIA (12 points)

      A) What is the slope of the demand curve for PGV to MIA flights?

      B) Find the price elasticity of demand if price is $300.

      C) Based on your finding in (B), how can U.S. Air increase revenue?