Microeconomics, Engel curves, final exam practice problems

(The attached PDF file has better formatting.)

*Question 1.1: Engel Curve

The table below shows the portions of gruel and steak per month bought by a consumer for monthly incomes of $10,000 through $100,000:

Income	*Gruel*	*Steak*
10,000	5	1
20,000	10	2
30,000	15	3
40,000	20	4
50,000	25	5
60,000	25	6
70,000	20	7
80,000	15	8
90,000	10	9
100,000	5	10

Which of the following is true?

A. Gruel is a normal good at low incomes and an inferior good at high incomes; steak is a normal good at all incomes shown in the table.
B. Gruel is a normal good at high incomes and an inferior good at low incomes; steak is a normal good at all incomes shown in the table.
C. Gruel is a normal good at low incomes and an inferior good at high incomes; steak is an inferior good at all incomes shown in the table.
D. Gruel is a normal good at high incomes and an inferior good at low incomes; steak is an inferior good at all incomes shown in the table.
E. Gruel is a normal good at high incomes and an inferior good at low incomes; steak is a normal good at low incomes and an inferior good at high incomes.

Answer 1.1: A

~ Normal good: quantity increases with income
~ Inferior good: quantity decreases with income

*Question 1.2: Engel Curve

An Engel curve shows income on the horizontal axis and quantity demanded on the vertical axis. Which of the following is true?

A. A normal good has a vertical Engel curve; an inferior good has a horizontal Engel curve.
B. An inferior good has a vertical Engel curve; a normal good has a horizontal Engel curve.
C. A normal good has an upward sloping Engel curve; an inferior good has a downward sloping Engel curve.
D. An inferior good has an upward sloping Engel curve; a normal good has a downward sloping Engel curve.
E. Both normal and inferior goods have upward sloping Engel curves.

Answer 1.2: C

A vertical Engel curve means that for a slight increase in income, the consumer buys an infinite quantity of the good; no good has a vertical Engel curve.

A horizontal Engel curve means that the consumption of the curve does not depend on the consumer's income. A good might have a flat Engel curve over some range of income.

~ An upward sloping Engel curve means that as income rises, the consumer buys more of the good (a normal good).
~ A downward sloping Engel curve means that as income rises, the consumer buys less of the good (an inferior good).

*Question 1.3: Normal Goods and Inferior Goods

A change in the price of a good has both income and substitution effects. The substitution and income effects cause quantity to move

A. In the same direction, whether the good is normal or inferior.
B. In opposite directions, whether the good is normal or inferior.
C. In the same direction for normal goods and in opposite directions for inferior goods.
D. In the same direction for inferior goods and in opposite directions for normal goods.
E. In opposite directions for large price changes and in the same direction for small price changes, whether the good is normal or inferior.

Answer 1.3: C

The substitution effect causes the consumer to buy less of the good as its price rises. The income effect causes the consumer to buy less of normal goods and more of inferior goods as the price of the good rises.

Jacob: When examining the effects of price changes for goods like bread and wine, must we consider both substitution and income effects?

Rachel: The income effect is relevant only for goods that constitute a large portion of the consumer's income. In developed countries, food is a small percentage of income. The only goods with material income effects are housing and automobiles, both of which are normal goods.

*Question 1.4: Income and Substitution Effects

Suppose that new automobiles are a normal good, with an upward sloping Engel curve. The price of new autos is $50,000. If the price of new autos changes to $60,000, what are the income and substitution effects on the quantity demanded of new autos?

A. substitution effect ⇛ quantity increases; income effect ⇛ quantity increases
B. substitution effect ⇛ quantity increases; income effect ⇛ quantity decreases
C. substitution effect ⇛ quantity decreases; income effect ⇛ quantity increases
D. substitution effect ⇛ quantity decreases; income effect ⇛ quantity decreases
E. substitution effect ⇛ quantity increases; income effect ⇛ quantity may increase or decrease

Answer 1.4: D

The substitution effect always causes a decrease in the quantity demanded when the price increases. The income effect depends on the type of good. For a normal good, when the consumer's income (or wealth) increases, the quantity demanded increases. In this problem, the auto purchaser's income (wealth) *decreases*, since the new auto costs more and leaves the consumer with less money, so the quantity demanded *decreases*.

- For low cost goods, the income effect from a change in good's price is not noticeable.
- For expensive items like cars and houses, the income effect is material.

*Question 1.5: Giffen Good

The substitution and income effects for a non-Giffen inferior good

A. Move in the same direction
B. Move in opposite directions, with the substitution effect larger; the uncompensated demand curve is upward sloping
C. Move in opposite directions, with the income effect larger; the uncompensated demand curve is upward sloping
D. Move in opposite directions, with the substitution effect larger; the uncompensated demand curve is downward sloping

E. Move in opposite directions, with the income effect larger; the uncompensated demand curve is downward sloping

Answer 1.5: D

*Question 1.6: Substitution and Income Effects

Suppose the substitution and income effects both lower the quantity demanded of sugar when its price rises. We may infer that sugar

A. Is a normal good
B. Is an inferior good
C. Could be a Giffen good
D. Has an upward sloping compensated demand curve
E. Has an upward sloping uncompensated demand curve

Answer 1.6: A