

Work out. Show all the necessary steps.

1. Find the rate of increase if the daily average income of a labor increased from birr 300 to birr 550 in the last month.
2. Find the total cost of a computer desktop which costs birr 15,000 if the VAT on sales is 15% .
3. A car dealer wants to sell a car for birr 1,200,000 with 15% markup on its cost. Find the cost of the car.
4. If you deposited birr 2,400 in your account compounded quarterly with annual interest rate of 7% for 5 years, then find
 - A. future value
 - B. amount of interest
5. If Paulos deposited birr 1,200 in CBE and he received a total of birr 1380 after 18months, what was the simple annual interest rate per annum?
6. A computer that costs birr 14,000 is estimated to have a salvage value of birr 300 at the end of 3 years of use. Find book value at the end of the second year.
7. 10 workers can build a fence of 20m in 12 days. In how many days can 4 workers finish this fence?
8. Consider the function $Z = x+2y$ subjected to the constraints
$$\begin{cases} x, y \geq 0 \\ x - y \geq 5 \\ x + 4y \leq 8 \end{cases}$$
then find the optimum value
9. P is proportional to square of q and cube root of r. Find the equation that relates the variables, p, q & r if p=24 when p=4 and r=8.
10. A boutique increased the price of a new arrival jacket by 5%. If the price originally was birr 1800, find the new price.
11. Suppose that you work in ABC company earning a monthly salary of birr 6500. If you deposit 8% of your monthly salary at the end of each month at 6% compounded weekly, find i) your accumulated value by the end of four years

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ii) Your interest rate

12. Mrs.Y deposited birr 3200 at 7.4% compounded semi – annually. How many years will it take her to receive birr 7000?
13. Find the present value of an investment that will grow to birr 100,000 after 5 years compounded monthly at 6% per year.
14. Consider that CBE two TV programs on air. The first session requires 12 minutes for entertainment and 10 minutes for NEWS report. The second session requires 18 minutes for entertainment and 5 minutes for NEWS report. At least 8 hours on entertainment and 6 hours on NEWS report are available per month. If CBE estimated to realize a profit of birr 80 on the first session and birr 100 on the second session, how many programs of each session should be prepared per month to maximize its profit?
15. Find equation of a line passing through the point (5,-2) and
- i) Parallel to the line L: $y + 4(1 - \frac{1}{2}x) = y - 1$
 - ii) Perpendicular to the line L: $3x - 2y + \frac{1}{2} = 1 - 2y$

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