

UNIT I

1. The amount borrowed by the debtor is called
a) **Principlal** b) Amount c) Interest d) Unit of time
2. Interest earned plus principal amount is considered as
a) Semiannual amount b) **Compound amount**
c) Simple amount d) Annual amount
3. The fees or the charge paid by the borrower for unusing the money of the lender is called
a) Principal b) Amount c) **Interest** d) Unit of time
4. Find the simple interest on the sum of Rs. 6000 at 10% p.a for 3 years.
a) Rs. 1,000 b) 2,000 c) **1,800** d) 1,500
5. Assumption in calculating annuity is that every payment is
a) **equal** b) different c) nominal d) marginal
6. What is the formula for calculating simple interest amount?
a) $Pnr/100$ b) Pnr c) **$P+I$** d) $P+A$
7. What payments are to be made for a specified period of time?
a) **Annuity certain** b) Annuity c) Annuity contingency d) Amount
8. Amount of money today which is equal to series of payments in future
a) Nominal value of annuity b) Sinking value of annuity
c) **Present value of annuity** d) Future value of annuity
9. The difference between bankers discount and true discount is the
a) Discount period b) True discount c) Face value d) **Bankers gain**
10. What is the formula for calculating simple interest?
a) **$I=Pnr/100$** b) $I=Pnr$ c) $I=P+I$ d) $I=P+A$
11. Which payments depend on the happening of certain contingencies?
a) Annuity certain b) Annuity c) **Annuity contingency** d) Amount
12. When the payments fall due at the beginning of each interval?
a) **Annuity due** b) Immediate annuity c) Annuity contingency d) Perpetual annuity
13. When the payments are to be made at the end of each interval?
a) Annuity due b) **Immediate annuity** c) Annuity contingency d) Perpetual annuity
14. A bills of exchange contains
a) A promise to pay b) **An order to pay** c) A request to pay d) All of the above

15. A bill of exchange is drawn by
 a)Debtor b)Creditor c)Holder d)agent
16. A person who draws bill of exchange is called
 a)**Drawer** b)Drawee c)Payee d)Agent
17. When a bill of exchange is signed by drawee, the bill is said to be
 a)Renewed **b)Accepted** c)Retired d)Endorsed
18. The difference between legally due date and the date of discounting is
 a) **Discount period** b) True discount c) Face value d) Bankers gain
19. The difference between the face value and the present value is
 a) Discount period **b) True discount** c) Face value d) Bankers gain
20. What is the formula for calculating compound interest?
 a)CI=P+I b)CI=Pnr **c)CI=A-P** d)CI=P+A

UNIT II

21. The intersection of sets A and B is expressed as?
 a)A-B b)A*B c)A/B **d)A∩B**
22. A set with no element in it is known as
 a)subset b)singleton set c)power set **d)empty set**
23. If A =[5,6,7] and B=[7,8,9]then A U B is equal to:
 a) [5,6,7] **b) [5,6,7,8,9]** c) [7,8,9] d) [6,7,8,9]
24. Every set is a _____ of itself
 a) Proper subset **b) Improper subset** c) Compliment d) None of the above
25. If U = {1,2,3,4,5} and A = {2,4} then A' should be
 a){2,4,5} b){2,4} c){1,2,3,4,5} **d){1,3,5}**
26. A set containing only one element is said to be
 a) Subset **b) singleton set** c) power set d) empty set
27. Set N = {1, 2, 3, 4, 5.....} is known as
 a)set of odd numbers b)set of whole numbers
c) Set of natural numbers d) set of even numbers
28. Complement of a set B in denoted by
 a)**B'** b)B° c){B} d)B²

29. If $A = \{2, 3, 4, 5, 6\}$ and $B = \{4, 5, 6, 7\}$ then $A \cap B$ should be
 a) $\{2, 3, 4, 5, 6, 7\}$ b) $\{4, 5, 6, 7\}$ **c) $\{4, 5, 6\}$** d) $\{0\}$
30. Individual Objects in a set are called
 a) **element** b) set c) list d) None of above
31. A group or collection of objects is called
 a) element **b) set** c) list d) group

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 a) $CI = P + I$ b) $CI = Pnr$ **c) $CI = A - P$** d) $CI = P + A$

UNIT II

21. The intersection of sets A and B is expressed as?
 a) $A - B$ b) $A * B$ c) A / B **d) $A \cap B$**
22. A set with no element in it is known as
 a) subset b) singleton set c) power set **d) empty set**
23. If $A = \{5, 6, 7\}$ and $B = \{7, 8, 9\}$ then $A \cup B$ is equal to:
 a) $\{5, 6, 7\}$ **b) $\{5, 6, 7, 8, 9\}$** c) $\{7, 8, 9\}$ d) $\{6, 7, 8, 9\}$
24. Every set is a _____ of itself
 a) Proper subset **b) Improper subset** c) Compliment d) None of the above

25. If $U = \{1,2,3,4,5\}$ and $A = \{2,4\}$ then A' should be
 a) $\{2,4,5\}$ b) $\{2,4\}$ c) $\{1,2,3,4,5\}$ **d) $\{1,3,5\}$**
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 a) Subset **b) singleton set** c) power set d) empty set
27. Set $N = \{1, 2, 3, 4, 5, \dots\}$ is known as
 a) set of odd numbers b) set of whole numbers
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28. Complement of a set B is denoted by
a) B' b) B° c) $\{B\}$ d) B^2
29. If $A = \{2, 3, 4, 5, 6\}$ and $B = \{4, 5, 6, 7\}$ then $A \cap B$ should be
 a) $\{2, 3, 4, 5, 6, 7\}$ b) $\{4, 5, 6, 7\}$ **c) $\{4, 5, 6\}$** d) $\{0\}$
30. Individual Objects in a set are called
a) element b) set c) list d) None of above
31. A group or collection of objects is called
 a) element **b) set** c) list d) group
32. Let A and B be two sets in the same universal set. Then $A - B =$
 a) $A \cap B$ b) $A' \cap B$ **c) $A \cap B'$** d) None of these
33. For any two sets A and B, $(A - B)$ is a subset of
a) A b) B c) $A - B$ d) None of these
34. The set of positive integers is _____
a) Infinite b) Finite c) Subset d) Empty
35. When $r > 1$, the series is an _____ G.P.
a) Increasing b) Decreasing c) element d) Progression
36. When d is positive, the series is an _____ A.P
a) Increasing b) Decreasing c) element d) Progression
37. The series is a decreasing A.P, when d is
 a) Positive b) Increasing **c) Negative** d) Decreasing
38. Common difference of sequence 5,8,11,14,... is
a) 3 b) -3 c) 0 d) 1
39. Which of the following is not an arithmetic sequence?
a) 11, 2, -8, -19, ... b) 4, 7, 10, 13, ... c) 57, 51, 45, 39, ... d) -3, -5, -7, -9, ...

40. An arrangement of numbers written in definite as per some specific rules is called
a)subset **b)series** c) combination d)permutation

UNIT III

41. Transpose of a rectangular matrix is a
a)rectangular matrix b)diagonal matrix c)square matrix d)scaler matrix
42. If a matrix has m rows and n columns then order is
a)m + n b)n x n c)m x m **d)m x n**
43. If A and B matrices are of same order and $A + B = B + A$, this law is known as
a) Distributive law **b) commutative law** c) associative law d)cramer's law
44. We can add two matrices having real numbers A and B if their
a)order is same b)rows are same c)columns are same d)elements are same
45. A diagonal matrix having equal elements is called a
a)square matrix b)identical matrix **c)scalar matrix** d)rectangular matrix
46. If A, B and C matrices are of same order and $(A + B) + C = A + (B + C)$, this law is known as
a)cramer's law b)distributive law c)commutative law **d)associative law**
47. Transpose of a column matrix is
a)zero matrix b) diagonal matrix c)column matrix **d)row matrix**
48. Two matrices A and B are multiplied to get AB if
a)both are rectangular b)both have same order
c)no of columns of A is equal to columns of B
d)no of rows of A is equal to no of columns of B
49. If $|A| = 0$, then A is
a)zero matrix **b)singular matrix** c)non-singular matrix d)0
50. Additive inverse of a matrix A is
a)A b) $|A|$ c) A^2 **d)adj A $|A|$**
51. $[a \ b \ c]$ is a
a)zero matrix b)diagonal matrix c)column matrix **d)row matrix**
52. Matrices obtained by changing rows and columns is called
a)rectangular matrix **b)transpose** c)symmetric d)None of Above

65. Derivative of e^x

- a) nx b) nx^{n-1} c) e^{x-1} **d) e^x**

66. Derivative of $\log x$

- a) $1/x$** b) $1+x$ c) $x/1$ d) $\log 1/x$

67. The additive rule $d/dx(u+v)$ is

- a) $du/dx + dv/dx$** b) $du/dx - dv/dx$ c) $dv/dx + dv/dx$ d) $du/dx + du/dx$

68. The product rule $d(uv)/dx$ is

- a) $v(dv/dx)+v(du/dx)$ **b) $u(dv/dx)+v(du/dx)$**
c) $u(du/dx)+v(du/dx)$ d) $u(dv/dx)+v(dv/dx)$

69. What is the formula for calculating total revenue?

- a) $R=xp$** b) $R=x/p$ c) $R=x+p$ d) $R=x-p$

70. choose the formula for calculating average cost

- a) Total revenue/number of units **b) Total cost/number of units**
c) Total fixed cost/number of units d) Total variable cost/number of units

71. interpretation of price elasticity of demand $|\eta_d| < 1$ is

- a) Elastic **b) Inelastic** c) Unitary elastic d) None of the above

72. When $d^2y/dx^2 < 0$ the value is

- a) Maximum **b) Minimum** c) Unitary d) Natural

73. interpretation of price elasticity of demand $|\eta_d| > 1$ is

- a) Elastic** b) Inelastic c) Unitary elastic d) None of the above

74. interpretation of price elasticity of demand $|\eta_d| = 1$ is

- a) Elastic b) Inelastic **c) Unitary elastic** d) None of the above

75. When $d^2y/dx^2 < 0$ the value is

- a) Maximum** b) Minimum c) Unitary d) Natural

76. How to calculate total cost?

- a) Total fixed cost + total variable cost** b) Total revenue + total variable cost
c) Total marginal cost + total variable cost d) Total fixed cost + average variable cost

77. Derivative of e^{7x+9} where u is

- a) 7 b) $x+9$ **c) $7x+9$** d) 9

78. Derivative of $3 \log x$ is

- a) x^3 b) $1/3$ **c) $3/x$** d) $x/3$

79. When $d^2y/dx^2 > 0$ the value is
 a) **Maximum** b) Minimum c) Unitary d) Natural
80. Derivative of $(3x^2+5x+1)$
 a) $6x$ b) $6x+5+1$ c) **$6x+5$** d) $6x+6$

UNIT V

81. integration of $u dv =$ _____
 a) $uv - \int u dv$ b) **$uv - \int v du$** c) $u.dv.v - \int u dv$ d) $u dv - \int u dv$
82. integration is the inverse process of
 a) variable b) **differentiation** c) function d) derivative
83. $\int x^n dx =$
 a) **$(x^{n+1}/n+1)+c$** b) $(x/n+1)+c$ c) $(x^{n+1}/n+1)$ d) $(x^{n+1}/n)+c$
84. $\int (1/x) dx =$
 a) $x+c$ b) $\log x$ c) $1/\log x$ d) **$\log x+c$**
85. $\int e^x dx$ is
 a) e^x+x b) e^x c) **e^x+c** d) e^x/x
86. Integrate x^4 is
 a) **$x^5/5+c$** b) $x^5/5$ c) x^5+c d) $x^5/x+c$
87. Integrate $4/\sqrt{x}$
 a) **$2\sqrt{x}+c$** b) $2\sqrt{x}$ c) $\sqrt{x}+c$ d) $2x+c$
88. Integrate $3x^2-8x+5$ is
 a) x^4+4x^2+5x b) $x^4+4x+5x+c$ c) $x+4x^2+5x+c$ d) **x^3+4x^2+5x+c**
89. Which one is consisting of two or more factors in the denominator is expressed as a sum of two or more fractions
 a) integration b) **Partial fraction** c) Additive d) differentiation
90. Each fraction can be integrated by the method of _____
 a) addition b) Partial fraction c) **substitution** d) differentiation
91. Integrate e^x-1 with respect to x .
 a) **e^x-x+c** b) e^x-1 c) e^x-1+c d) e^x
92. Integration of 1 is
 a) x b) **$x+c$** c) $1+c$ d) 0

93. What is the other name for integral?
a)antiderivative b)Primitive c)Particular integral **d)All of the above**
94. Integration of marginal revenue function gives _____function.
a)total revenue b)Average cost c)marginal cost d)None of the above
95. In integration c is called as _____integration.
a)variable **b)constant** c)additive d)Subtract
96. The process of finding the integral of a function is called
a)differentiation b)matrix **c)Integration** d)partial fraction
97. \sqrt{x} is simplified by
a) $1/x$ b)1 c) x^2 **d) $x^{1/2}$**
98. e^0 means
a)0 **b)1** c)2 d)3
99. Consumer surplus and producer surplus can also be found by
a)derivative b)differentiation **c)integration** d)fraction
100. Integration of 5 is
a)5x b)5+x c)x+c **d)5x+c**

UNIT I

1. What is mean by simple interest?

Interest for one unit of time is multiplied by number of times

2. Write down the difference between simple interest and compound interest.

Simple interest is based on principal; compound interest is based on principle and interest.

3. State the two kinds of annuity.

Annuity contingent and Annuity certain

4. What is mean by compound interest?

Compound interest is the addition of interest to the principal sum of a deposit.

5. Write down the types of annuity.

Immediate annuities, deferred income annuities, Fixed annuities, Variable annuities.

6. Bring out the meaning for bills discounting.

An arrangement whereby the seller recovers an amount of sales bill.

7. What is mean by face value?

The value due on the due date from a bill of exchange is its face value.

8. State the meaning for true discount.

The difference between face value and the present value

9. Point out other name for bankers discount.

Commercial discount

10. What is mean by banker gain?

The difference between bankers discount and true discount

UNIT II

11. What is a set?

A set is a collection of objects.

12. State the meaning for universal set.

A Universal Set, U, which contains all possible elements of any set we wish to consider.

13. Write down the meaning for subset?

The notation for A is a subset of B is $A \subseteq B$.

14. What is mean by venn diagrsm?

There is a rectangle to represent the universe and closed figures inside the rectangle to represent sets.

15. List out the types of sets.

Empty set, Singleton set, Finite and Infinite set, Union of sets.

16. What is other name for null set ?

Empty set $\{ \}$.

17. What is the element of set?

A number, letter, point, line, or any other object contained in a set.

18. Define arithmetic progression.

Common difference between any two succeeding numbers is a constant.

19. Bring out the two types of description of sets.

Tabulation method and set builder method

20. Point out the other name for tabulation method.

Roaster method.

UNIT III

21. Define matrix.

A matrix is a collection of numbers arranged in to a fixed number of rows and column

22. List out the some types of matrix.

Rows Matrix, Columns Matrix, Rectangular Matrix.

23. What is mean by row matrix?

A row matrix has only one row but any number of columns.

24. State the meaning for square matrix.

A square matrix has the number of columns equal to the number of rows.

25. What is the other name for Zero matrix?

Null matrix

26. What is the difference between Matrix and Determinant?

A matrix is a group of numbers, and a determinant is a unique number.

27. Define adjoint matrix.

The adjoint of a matrix is the transpose of the cofactor matrix.

28. State the meaning for inverse matrix.

The multiplicative inverse of a square matrix is called its inverse matrix.

29. Bring out the meaning for diagonal matrix.

All its elements zero except for those in the diagonal from top left to bottom right.

30. What is Upper Triangular Matrix?

All the elements below the diagonal are zero is known as the upper triangular matrix.

UNIT IV

31. What is differentiation?

The value change in the dependent variable divided by the change in the independent variable.

32. How is it called differentiation?

The differentiation is called the derivative.

33. Why do we need derivative?

The derivative measures the steepness of the graph of a function at some particular point.

34. Define derivative.

Function of a real variable measures the sensitivity to change of the function value.

35. Write down the formula for calculating total revenue.

Total revenue = number of units sold * price per unit

36. State the formula for calculating average cost.

Total cost / number of units

37. Bring out the interpretation of price elasticity of demand.

$\eta_d < 1$ is Inelastic; $\eta_d = 1$ is unitary; $\eta_d > 1$ is elastic

38. What is the other name for price elasticity of demand?

Point elasticity of demand

39. State the condition for $d^2y/dx^2 < 0$

It attained the maximum

40. bring out the condition for $d^2y/dx^2 > 0$

It attained the minimum

UNIT V

41. What is mean by integration?

Integration is the inverse process of differentiation.

42. Integrate $x^n dx$

$$(x^{n+1}/n+1)+c$$

43. Integration of $(1/x)dx$

$$\log x+c$$

44. Integrate $3x^2-8x$ is

$$X^3+4x^2+c$$

45. Write down the rule of integration by parts

$$u dv= uv-\int v du$$

46. State the meaning for partial fraction.

Two or more factors in the denominator is expressed as a sum of two or more fractions.

47. Evaluate $\int 4x^6-2x^3+7x-4dx$

$$4/7x^7-1/2x^4+7/2x^2-4x+c$$

48. Integrate $x^{-2} dx$

$$(-1/x) + c$$

49. Integrate $1/(3+5x) dx$

$$(1/5) \log (3+5x) + C$$

50. State the definite integrals

$$\int_a^0 f(x) \text{ denotes definite integrals.}$$

UNIT I

1. Find the simple interest on the sum of Rs. 10,000 at 5% p.a for 6 years.
2. A sum of Rs.1,000 is to be paid at the end of every year for a period of 5 years at the rate of 10% per annum compound interest. If the first installment is paid at the end of the first year, how much amount will be accrued to the credit of the depositor? What is its present worth?
3. Rs.6,000 amounts to Rs.8,940 at 14% p.a. interest. Find the number of years for which the amount was lent.
4. Find the Bankers Gain on a bill of Rs.2,000 for 4.5 months at 4% p.a.
5. Calculate the rate of interest of a bill of Rs. 12,937.50 whose true discount for the unexpired period of 4 months is Rs. 437.50.

UNIT II

6. What are the methods of description of sets?
7. Briefly explain the any five types of sets.
8. If $A=\{1,2,3,4,5,6,7,8,9\}$, $B=\{1,2,3,4,5\}$, $C=\{2,4,6,8\}$ and $D=\{4,5,6,7\}$ find (i) $B \cup C$ (ii) $B \cap D$ (iii) $(B \cup C) \cap D$
9. The fourth and seventh terms of an A.P. are 3 and 36. Find the A.P. and its fifteenth term.
10. If the third and the seventh terms of a G.P are 2 and $1/8$, find the G.P and its tenth term.

UNIT III

11. Find the minors and cofactor of all the elements of
$$\begin{vmatrix} 5 & 6 & 7 \\ 0 & 1 & -3 \\ -2 & 4 & 9 \end{vmatrix}$$
12. If $A = \begin{vmatrix} 4 & 6 & 9 \\ 3 & 5 & 10 \end{vmatrix}$ and $B = \begin{vmatrix} 5 & 0 & 1 \\ 4 & -7 & -3 \end{vmatrix}$ find $A+B$, $A-B$ And $B-A$.
13. Evaluate
$$\begin{vmatrix} 8 & 4 & 2 \\ 2 & 8 & 4 \\ 4 & 2 & 8 \end{vmatrix}$$
14. If $A = \begin{vmatrix} 1 & -1 \\ 0 & 2 \end{vmatrix}$ and $B = \begin{vmatrix} 1 & 0 \\ 1 & 2 \end{vmatrix}$ prove that $(A+B)^2 = A^2 + 2AB + B^2$.

15. Find the value of the determinant $A = \begin{vmatrix} 3 & -2 & 1 \\ 2 & 3 & -1 \\ 1 & 1 & 1 \end{vmatrix}$

UNIT IV

16. Differentiate the following

(i) $Y = 7x^4 + 2x^3 + 4x^2 - 6x + 100$ (ii) $4\sqrt{x} + 3/x + 5e^x$

17. If the demand law is $x = 20/p + 1$, find the elasticity of demand at the point when $p = 3$.

18. Differentiate the following

(i) $e^{(ax+b)}$ (ii) $\log(7x+9)$

19. If $C(x)$ rupees is the total cost of manufacturing x toys and $C(x) = 500 + 50/x + x^2/10$, find the average cost and the marginal cost when $x = 20$

20. Differentiate (i) $2x^3 - 3x^2 + 8x + 5$ (ii) $4x^5 + 3\log x - 8e^x$

UNIT V

21. Evaluate : (i) $\int (3x^2 + 8x + 5) dx$ (ii) $\int (x^3 + 4x^2 - 5x - 6) dx$.

22. Integrate $x \log x$.

23. Evaluate : $\int_0^2 (x^2 - 4x + 5) dx$.

24. Evaluate $\int_0^4 (\sqrt{x} + e^x) dx$

25. Solve $\int x^2 e^x dx$ by integration by parts.

UNIT I

1. A man left Rs.1,30,000 for his two sons aged 10 years and 16 years with the direction that the sum should be divided in such a way that the two sons get the same amount when they attain the age of 18 years. Assuming the rate of simple interest is 12.5% p.a., calculate the amount deposited in the elder son's account and in the younger son's account.
2. A bill was drawn on April 1st 1990 at 6 months and discounted on 23rd July, 1990, at 5%p.a. if the bankers' discount was Rs.160, find the value of the bill. How much more should would be the bill owner obtaining if it were discounted on July 24,1990?
3. True Discount on a bill drawn on 25th April for 7 months and discounted on 5th July is Rs.40 while the Bankers Discount is Rs.40.64. what is the value of the bill and what is the rate of interest?
4. The difference between the compound interest and the simple interest for 3 years at 5% p.a. on a certain sum of money was Rs.610. Find the sum.
5. Calculate compound interest for Rs. 2,500 for 4 years at 8% p.a. also calculate is half yearly and quarterly.

UNIT II

6. The sum of 3 numbers in G.P is 35 and their product is 1000. Find the numbers.
7. If $A = \{1,2,3,4,5,6,7,8,9\}$, $B = \{1,2,5,6,8,9\}$ and $C = \{2,3,4,5,6,9\}$ verify the
 $(A \cup B) \cap C = (A \cap C) \cup (B \cap C)$
 $(A \cap B) \cup C = (A \cup C) \cap (B \cup C)$
8. If $A = \{1,2,3,4,5,6,7,8,9\}$, $B = \{2,4,5,7,8,9\}$ and $C = \{1,3,4,6,7,8,9\}$ verify
 $A \cup (B \cap C) = (A \cup B) \cap (A \cup C)$ & $A \cap (B \cup C) = (A \cap B) \cup (A \cap C)$
9. (a).If $A = \{1,2,3,4,5,6,7,8,9\}$, $B = \{1,2,5,6,8,9\}$ and $C = \{2,3,4,5,6,9\}$ verify the Distributive Laws.
10. The first and the last terms of an A.P are -4 and 146 and the sum of the A.P is 7171. Find the number of terms in the A.P and the common difference.

UNIT III

11. Find the inverse of the matrix $A = \begin{vmatrix} 1 & 0 & -1 \\ 3 & 4 & 5 \\ 0 & -6 & -7 \end{vmatrix}$

12. By using Cramer's rule solve the following:

$$3x+y-z=1; \quad -2x+3y+z=6; \quad 3x-y-4z=3$$

13. $A = \begin{vmatrix} 2 & 0 & -1 \\ 2 & 4 & -1 \\ 1 & -8 & -3 \end{vmatrix}$ show that $|A|(Adj A) = A I_3$

14. Solve the following linear equation

$$5x-6y+4z=15$$

$$7x+4y-3z=19$$

$$2x+y+6z=46$$

15. Find the minors and cofactors of all the elements of $A = \begin{vmatrix} 1 & 4 & 3 \\ 4 & 2 & 1 \\ 3 & 2 & 2 \end{vmatrix}$

UNIT IV

16. Find the derivative of the $y=3x^2/4x-1$.

17. Find the maximum and minimum values of $y = 2x^3 - 21x^2 + 36x - 20$

18. Differentiate the following with respect to x

(i). $(ax+b)^n$ (ii). e^{ax+b} (iii). $\log_e(ax+b)$

19. Differentiate the following by using product rule.

(i) $Y=(x^2+5)(3x+1)$ (ii) $y=(2x+3)(3x^2)$

20. Investigate the maxima and minima of the function $y = 2x^2-6x+4$ at $x=2$.

UNIT V

21. Evaluate $\int dx/(x-1)(x^2-5x+6)$

22. Solve $\int x \log x \, dx$ by integration by parts.

23. Evaluate $\int x \, dx/(x-1)(2x+1)$ by using partial fractions.

24. Evaluate $\int \frac{x}{x^2-x} \, dx$ by method of partial fractions.

25. Solve $\int x e^{mx} \, dx$ by integration by parts.

