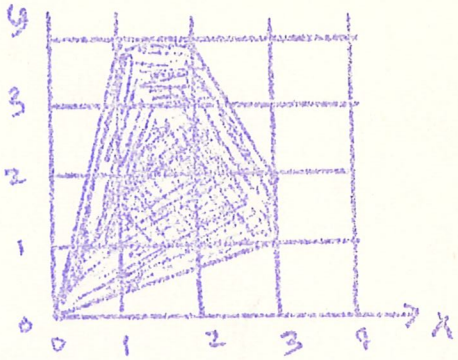
MATH 131 TEST II SHOW ALL WORK; BE NEAT

1 FIND THE RANGE AND DOMAIN OF

$\{(1,2), (2,3), (3,4), (4,4), (5,4)\}$

IS IT A FUNCTION? WHY OR WHY NOT?

2. FIND ALL EXTREME POINTS OF THE SHADED REGION



3. FIND THE MAXIMUM AND MINIMUM VALUES OF $E(x,y) = 2x - 3y$ ON S IF THE EXTREME PTS OF S ARE $(3,3), (4,-2), (2,-3), (3,-3)$ and $(-1,1)$

4. FIND THE EQUATION OF THE LINE AND ? FOR THE TABLE →

x	1	4	?
y	7	5	8

SOLVE ALGEBRAICALLY IN 5 & 6

5. $3x - 2y = 5$
$4x + 3y = 18$

6. $y = -6x + 8$
$y = x^2 - x + 2$

DO PROBLEMS 7, 8, 9 & 10 ON GRAPH PAPER

7. GRAPH $y = -x^2 - 4x - 3$, LABEL THE VERTEX AND GIVE ITS CO-ORDINATES, INDICATE THE REGION $y < -x^2 - 4x - 3$.

8. ON THE SAME GRAPH, GRAPH THE LINES A: $3y - x = -6$ and B: the line with slope -1 and y-intercept 2, LABEL THE LINES and FIND the CO-ORDINATES OF THE POINT OF INTERSECTION

9. ON THE SAME GRAPH, GRAPH THE LINES A: the line with slope $-\frac{2}{3}$ which passes through $(1,1)$ and B: the line which passes through the points $(-2,-4)$ and $(2,-2)$, LABEL the lines and find the CO-ORDINATES OF THE POINT OF INTERSECTION.

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10. GRAPH $S = \{(x,y): y \le x^2$ and $y \le -\frac{1}{3}x + 3$ and $y \ge \frac{1}{2}x + \frac{1}{2}\}$

MATH 131 QUIZ # 1

1. FACTOR: $x^2 + 3x - 28 = (\quad)(\quad)$.

2. SOLVE $2x + 10 = \frac{x}{2} - 1$

3. DIVIDE $x+3 \overline{)x^3 + x^2 + x + 22}$

4. SOLVE BY COMPLETING THE SQUARE

$$6x^2 + 12x + 4 = 0$$

name

1. Solve $x^2 + 6x + 4 = 0$

2. Use the Remainder Theorem to find the remainder of $x^5 + 2x^3 + x^2 + x^2 + 5$ when divided by $x - 1$.

3. Solve $\sqrt{x+5} - x = -1$

4. Factor into linear terms $x^3 + 6x^2 + 11x + 6$

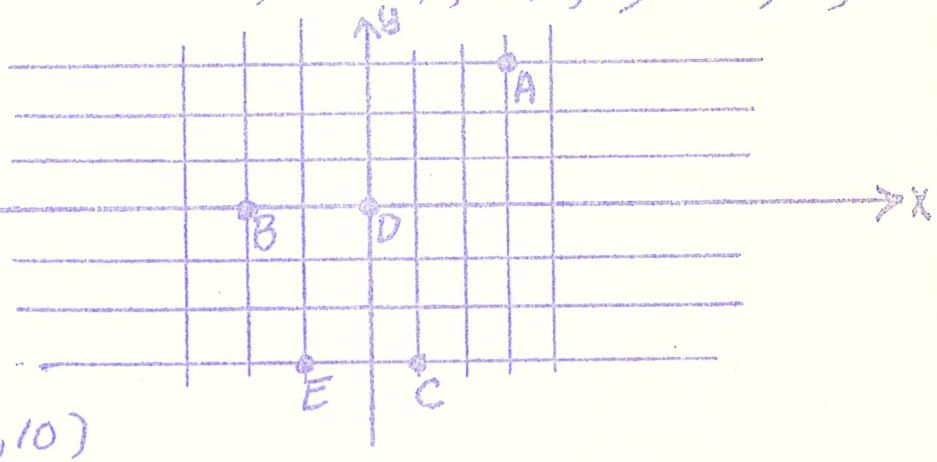
MATH 131 QUIZ 3 NAME _____

1. FIND THE COORDINATES OF THE PTS A, B, C, D & E AND PLOT THE POINTS P(1,2), Q(2,1), R(-1,3) S(3,-1) AND T(3,0)

A(,) B(,)

C(,) D(,)

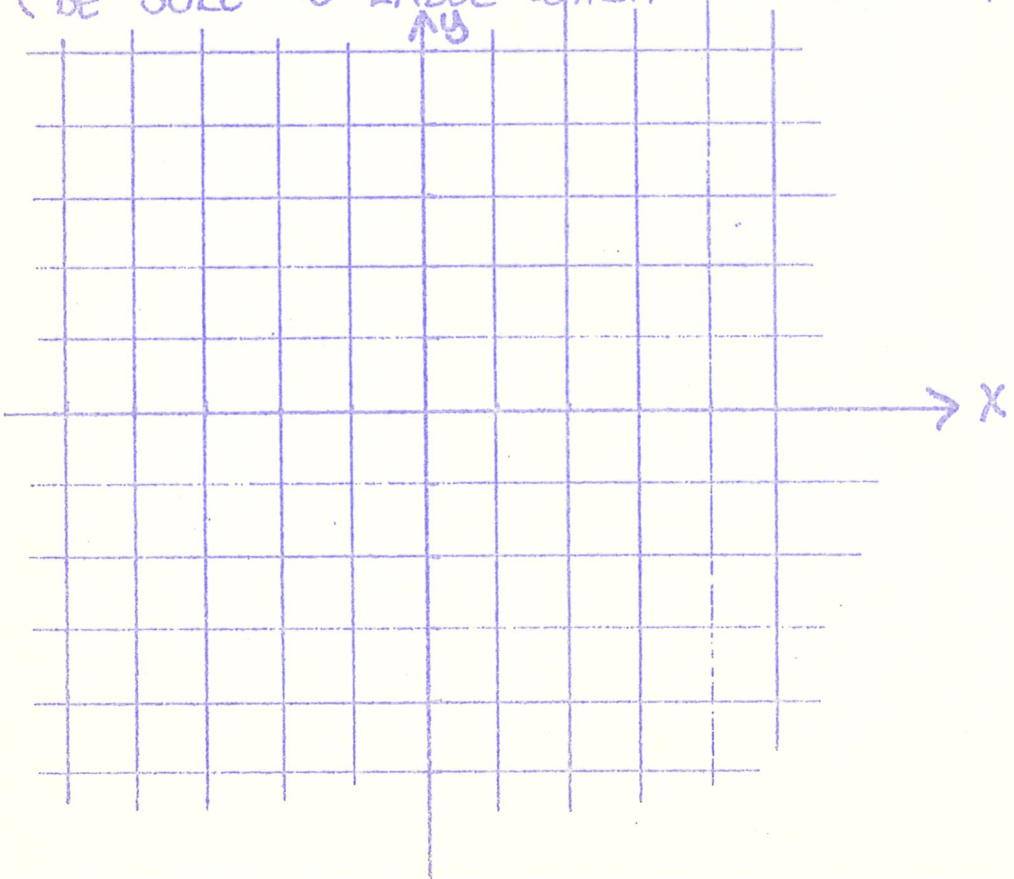
E(,)



2. WHAT IS THE DISTANCE BETWEEN (-10,7) AND (-14,10)

3. FACTOR $a^3 - 8b^6$

4 GRAPH THE LINES $y = -2x + 1$ AND $6y - 3x = 6$ (BE SURE TO LABEL WHICH IS WHICH)

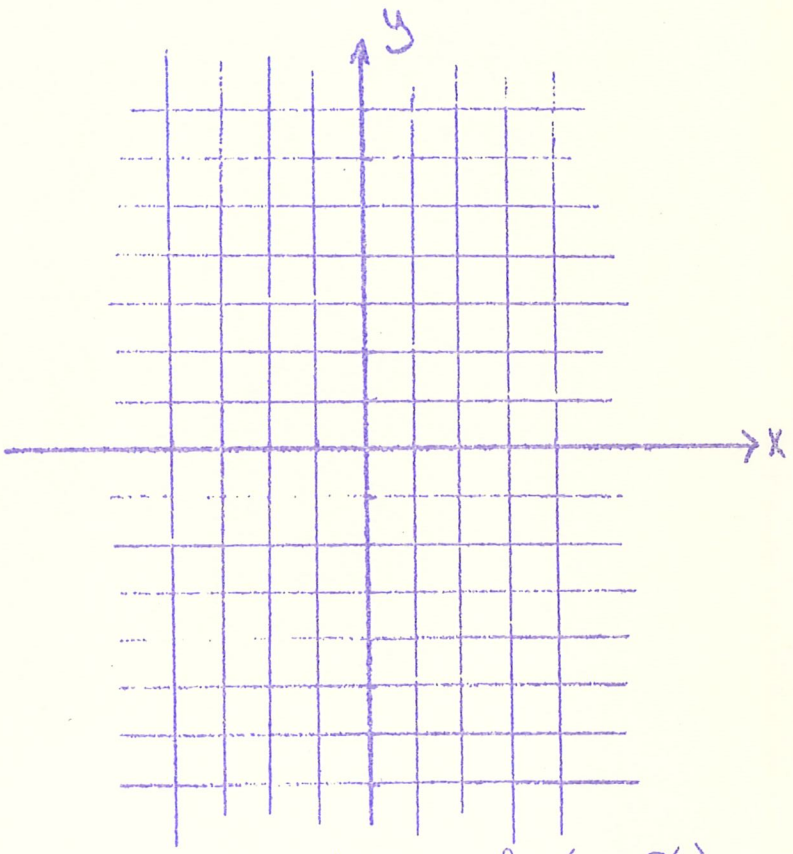


MATH 131 QUIZ 4

name _____

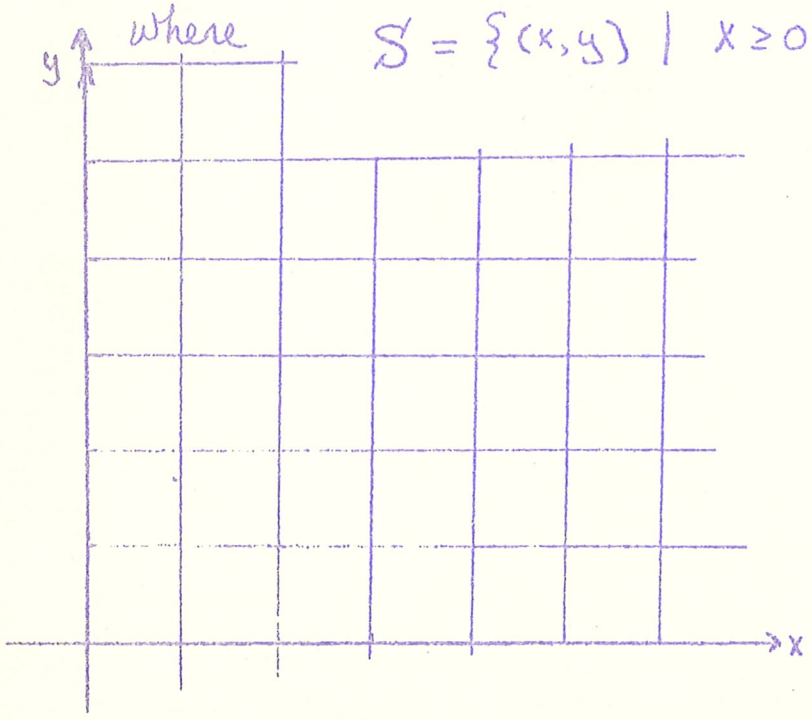
1. What is amount on $150.00 principle at interest rate 1½% over a period of 6 yrs. (simple interest.)

2. By graphing find all common solutions to
$y = x^2 + 1 - 2$
and $y = x + 1$.



3. On the same graph shade the region where
$y \leq x^2 + 1 - 2$
and $y \leq x + 1$

4. Find the maximum and minimum values of (on S)
$E(x,y) = 5x + y$ and the extreme points of S
where $S = \{(x,y) \mid x \geq 0, y \geq 0, y \leq -\frac{1}{2}x + 3$ and $y \leq -2x + 6\}$



MATH 131 QUIZ THE LAST _____

name

1. $3000 compounded monthly at a nominal rate of 6% for one year. Find the compound amount. What is the effective annual rate?

S \ r	.005	.015	.030
1	1.05000	1.015000	1.030000
2	1.010025	1.030225	1.060900
4	1.020150	1.061364	1.125509
6	1.030378	1.126493	1.194052
12	1.061678	1.195618	1.425761
20	1.104896	1.346855	1.806111

2. 7, 11 is the start of an arithmetic progression, write the next three terms ___ ___ ___, the 71st term ___ and the sum of the first 50 terms ___

3. An interest bearing note of $1000 for one year at 9% is discounted 6 months before it is due at a discount rate of 6%. What is the proceeds?

4. One anti-freeze is 10% Alcohol, a second is 1% Alcohol How much of each is needed to make 10 qts of anti-freeze that is 6% Alcohol?

MATH 131 FINAL SHOW ALL WORK BE NEAT
USE ONE SIDE OF EACH PAGE ONLY!

1. Solve $x^2 + 6x + 6 = 0$
2. Solve $\sqrt{x+4} + 5 = 2x - 2$
3. Factor $ab^3 - ba^5$
4. Find the proceeds and the bank discount on a note for \$250 for 60 days at a discount rate of 6%
5. Graph $y = x^2 - 2x + 1$ and $x + y = 3$. What are the common solutions?
6. 2, 5 are the first two terms of an arithmetic progression. Find the next four terms, the 100^{th} term and the sum of first 41 terms.
7. 7.7, 0.77 are the first two terms of a geometric progression. Find the next four terms, the 15^{th} term and the sum of the first 11 terms.
8. Compute the amount and present value of the annuity: \$500 payable semiannually for 5 years, interest at 4% compounded semiannually.
9. How much vodka (40% Alcohol) must be added to 8oz of orange juice to make a screwdriver that is 12% Alcohol?
10. Find the extreme points of S and the minimum and maximum values of $E(x,y) =$ on S, where
$S = \{(x,y) \mid x \geq 0, y \geq 0, x + y \leq 5 \text{ and } x + 2y \leq 4\}$

$(1+r)^t$ $\qquad$ $a_{\overline{t}|r}$

t \ r	0.02	0.04	0.02	0.04
2	1.0404	1.0816	2.0200	2.0400
5	1.1040	1.2167	5.2040	5.4163
10	1.2190	1.4802	10.9497	12.0061
20	1.4860	2.1911	24.2974	29.7781