(1.7) 2/1,8,27,64,125,216,343,512,729,1000
1+8=9, 18+27=35, 27+64=91, 125+64=189, 125+216=341,  216+343=559, 343+512=855 729+343=1072  343+125=468 512+216=728 729+216=945
$\frac{216+343-534}{343+175=462} = \frac{343+512-855}{512+716=728} = \frac{729+216=945}{729+216=945}$
No, positive perfect cube will equal the sum
of the cubes of two perfect integers.
or the cases of the period integers.
6/N=3 1+Z=3
constructive)
10/x(pos/ · y/pos/= n/non neg) x/neg/ · y/neg/ = n/non neg/
$\frac{10  \times (pos) \cdot \gamma(pos) = n(non neg)}{+ \times \cdot + \gamma = + \times \gamma} \times \frac{1}{- \times \cdot - \gamma} = \frac{1}{+ \times \gamma} \times \frac{1}{- \times \cdot - \gamma} = \frac{1}{+ \times \gamma}$
· · · · · · · · · · · · · · · · · · ·
Therefore, the product of two of the positive
number's or two of the regative numbers will
result in a nonnegative number.
[Nonconstructive]
2/1//2 11/2 11/2/10/10/12
$\frac{20/(x-1)^{2}}{20} = \frac{26/(50-n)^{2}-2500-100n+n^{2}}{150+n^{2}-2500+100n+n^{2}}$
$(x-1)^2 \times (0)$
N(x) 00,01,04,09,16,25,36,49,
$\frac{(x+1)\cdot (x-1) \geq 0\cdot (x+1)}{x} = \frac{64,81,21,44,69,96,56,89,24,}{61,41,84,29,76}$
v, (x+1)(x-1) > O, X
X The tinal? two decimal
-1./x2-1/20:-1 digits of a perfect square
-x2+120 are
tlx2 tlx2
$x^2+1 = 2x^2$
2 x2 cases (0-24) because
17+122 repetition after every 25

34/ X= a rational Z= aNZ, irrational Y=at 1/2, irrational
X < Y <z, an="" and="" between="" every="" irrational="" is="" number="" number.<="" rational="" td="" there="" theretore,=""></z,>
40) 64 (squares) - 4 (squares) = 60 (squares) [30 white + 30 black]
1 Domino per 1 black + 1 white Must have same number of white and black squares
P= Equal number of white and black squares  a= can be filed with dominous  P-> D
P Therefore, the checkerboard can be tiled, because there are an equal number of white and black
squares.  Review
4) a) converse = If I drive to work, then it is raining today, inverse = If it doesn't rain today, then I won't drive to work, then it didn't rain today, contrapositive = If I don't drive to work, then it didn't rain today.
6) inverse of inverse — inverse of converse inverse of contrapositive $P \rightarrow q$
14) a) 3x P(x) b) 3x 7P(x) c) 4y Q(y) a) 4x 4y P(x) Q(y) e) 3y 4x Q(y) TP(x)

. 5 - 1

<u> </u>	18/ Hy = x 76(x>3, y) 30/ Existential instantiation,
	There exists an element
	ex and an element y tor
	Phylosody Abril Lacques 1 a
	,7 know that $\exists x, y P(x, y)$ , is
	34 N=0: p <sup>2</sup> \( O \cdot \( O \cdot \) \\  34 N=0: p <sup>2</sup> \( O \cdot \( O \cdot \) \\  4 rue.
	$m=0$ $0 \leq 0 \leq 1$
	[2,1]
	ZWEX x is a nonnegative multiple of 33
	6/2xEZ -35x53
	0/2x x is a letter and MEXEPS
	yBCA, CCA, CCD,
	8) a) True b) True y fake d) True e) True f) True g) True
	t) true g) true
	16/A=51,2,33 B=53,1,23 18/a/0 6/1 C/2
	16/A= 81,2,33 B= 83,1,23 18/ a) 0 6/ 1 C/2
	A= {1,43 B= {1,4,43
	11-(1)
	201 Yes because if A and B have all the same
	20/ Yes, because if A and B have all the same subsets then they must be equal to eachother.
	susses that they prose to contain the
	24 a) No b) Yes = P({a3}) c) No d) Yes = P({ab3})
	) (Codo)
	30/ A= 81,23 AXB= El, a), (1,6), (2,0), (2,6)3
	30) A= £ 1,23 AXB= £(1, a), (1,b), (2,a), (2,b)3 B= £a,b3 BXA= £(a,1), (a,2), (b,1), (b,7)3
	So, AXB = BXA unless AZB.

[ZZ] ZJ aJANB JA-B JAUB dJ AUB-
4) a) AVB= Eagb, c, d, e, f, g, h3 b) ANB= Eagb, c, d, e3
4A-B= Ø d/B-A= E+,9,h3
12/AU(AMB)
$\frac{(x) \times (A \land B) 3}{(x) \times (A \land B) 3}$
EX XEAU(XEANXEBI3 A ANB
Since ANB is a subset of A, AV(ANB)=A.
SXIXE ANB 3 SXIXE AUBS
16) A) A A B A = EX   X E A U B B A - EX   X E A D B B B A - EX   X E A V X E B B B A A B C A V B B B A A C A U B B B A B C A V B B B B B B B B B B B B B B B B B B
ANBEA ACAUB
CA-B A=EXIXEA3 d) AN (B-A)  EXIXEAN XEB3 (XXXEAN (XEBN XEA)  A-BC A EXIXEAN XEAN XEA  ANA NB
A-BEA EXXEANXEA
e/AU(B-A) ANANB PNB
EXIXEAV (XEBAXEA)
$AV(B \land \overline{A})$ $A \land (B-A) = \emptyset$
AUBA NA
AUB
AU(B-A) = AVB

18) A) AUB AUBUC EXIXEAUB EXIXEAUXEBUXEC3 EXIXEAUXEBUXEC3
EXIXEAUB EXIXEAUBUCS
EXIXEAUXEBUXEC3
(AUB) = (AUBUC)
· · · · · · · · · · · · · · · · · · ·
$\frac{b)}{A}\frac{A}{B}\frac{B}{C}$
b) ANBNC EXIXEANBNC3 EXIXEANBNC3 EXIXEANXEBNXEC3 EXIXEANXEBNXEC3 (ANBNC) C (ANB)
EXIXEMAXEDAXELD ZXIXEMAXEMD
(ANDINC LETTE)
(1/A-R1-1 A-C
SXIXEANXABNXAC3 SXIXEANXEC3
(A-B)-C A-C ξx x∈AΛ x ∉BΛ x ∉C3 ξx x∈AΛ x ∉C3 (A-B)-C € A-C
a)(A-C)(C-B) e/(B-A) V(C-A)
A/A-C/N (C-B)  EX   XEANXEC N XEC N XEB  EX   XEBNXEA) V   XECNXE  ANDNB  BUCINA  EX   XEBUXEC'N XEA3  BUCINA  BUCINA  BUCINA
ANTNONB (BNA) U (CNA)
ANONB (BUC)NA
EX XEBUXEC' 1 X & A3
<u>BVCJ-A</u>
30) a) A = \( \( \{ \) \( \) \
$ \begin{array}{cccccccccccccccccccccccccccccccccccc$
- (-(1/4)/4) Jb) (1/L)
AUC=BUC ANC=BNC
$\xi_{1,2,3,4,5,63} = \xi_{1,23,4,5,63}$ $\xi_{1,23} = \xi_{1,23}$
A+B A+B
No
- 4 Yes

36) ADB (A-B) V (B-A) [AAB] V (BAA) EXIXEA AXEB V XEB AXEA 3	·
36) ADB (A-B) V (B-A) (A\B) V (B\A) (B\A) (B\A) (B\A) (B\A)	
AOB = (A-B) V (B-A)	
· · · · · · · · · · · · · · · · · · ·	
· · · · · · · · · · · · · · · · · · ·	
	~