Sean Poston
MA464
Exam 1

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1. gcd(5678, 1234) → $1234 \cdot 4 + 742$
gcd(1234, 742) → $742 \cdot 1 + 492$
gcd(742, 492) → $492 \cdot 1 + 250$
gcd(492, 250) → $250 \cdot 1 + 242$
gcd(250, 242) → $242 \cdot 1 + 8$
gcd(242, 8) → $8 \cdot 30 + 2$
gcd(8, 2) → $2 \cdot 4 + 0$
gcd = 2
1234 would not have a multiplicative inverse because the gcd ≠ 1.

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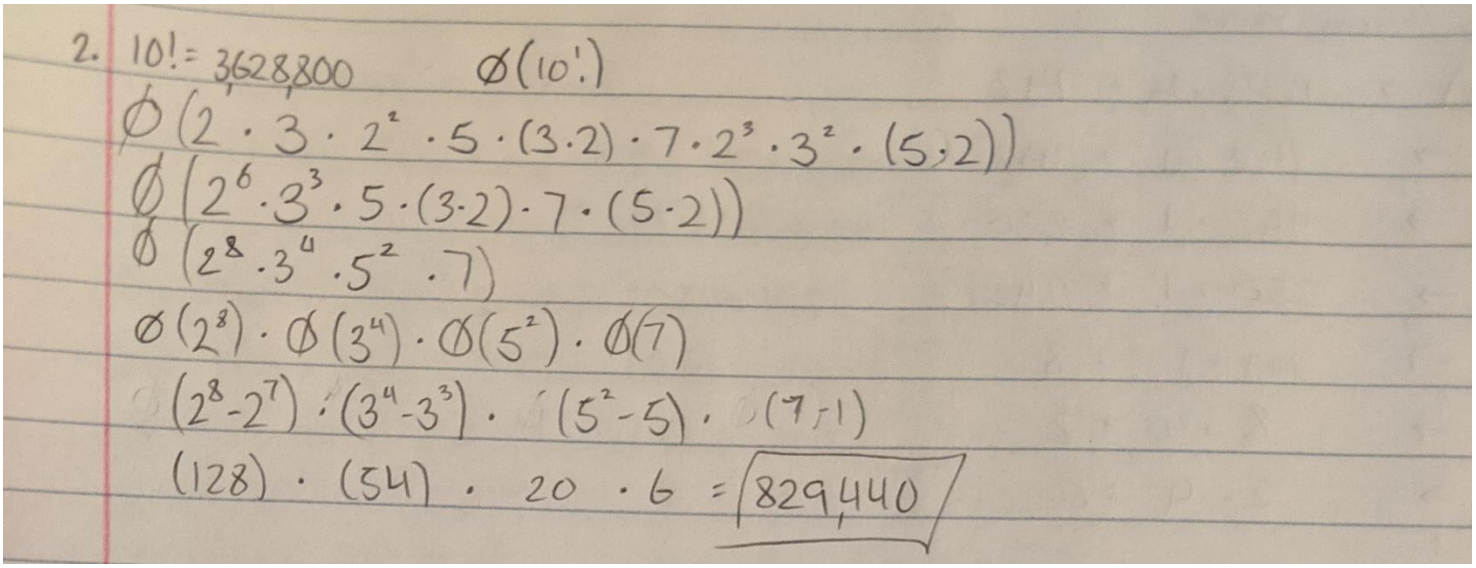

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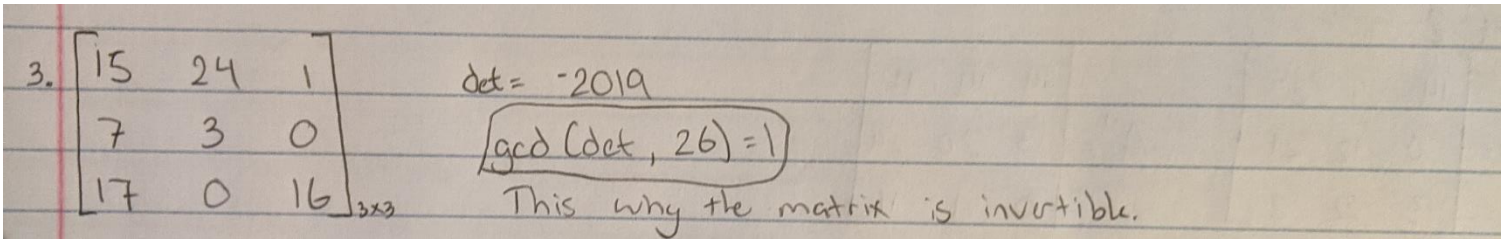

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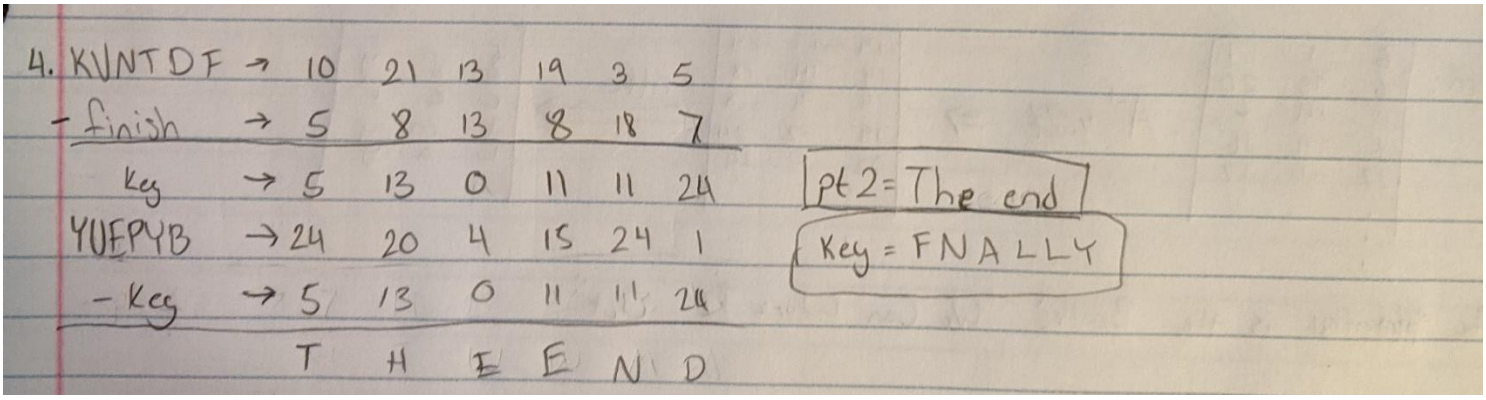

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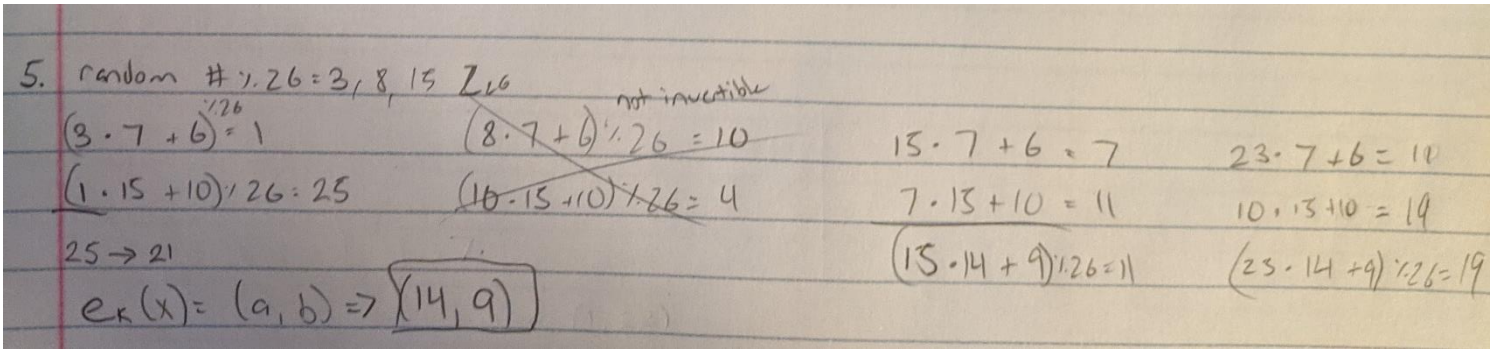

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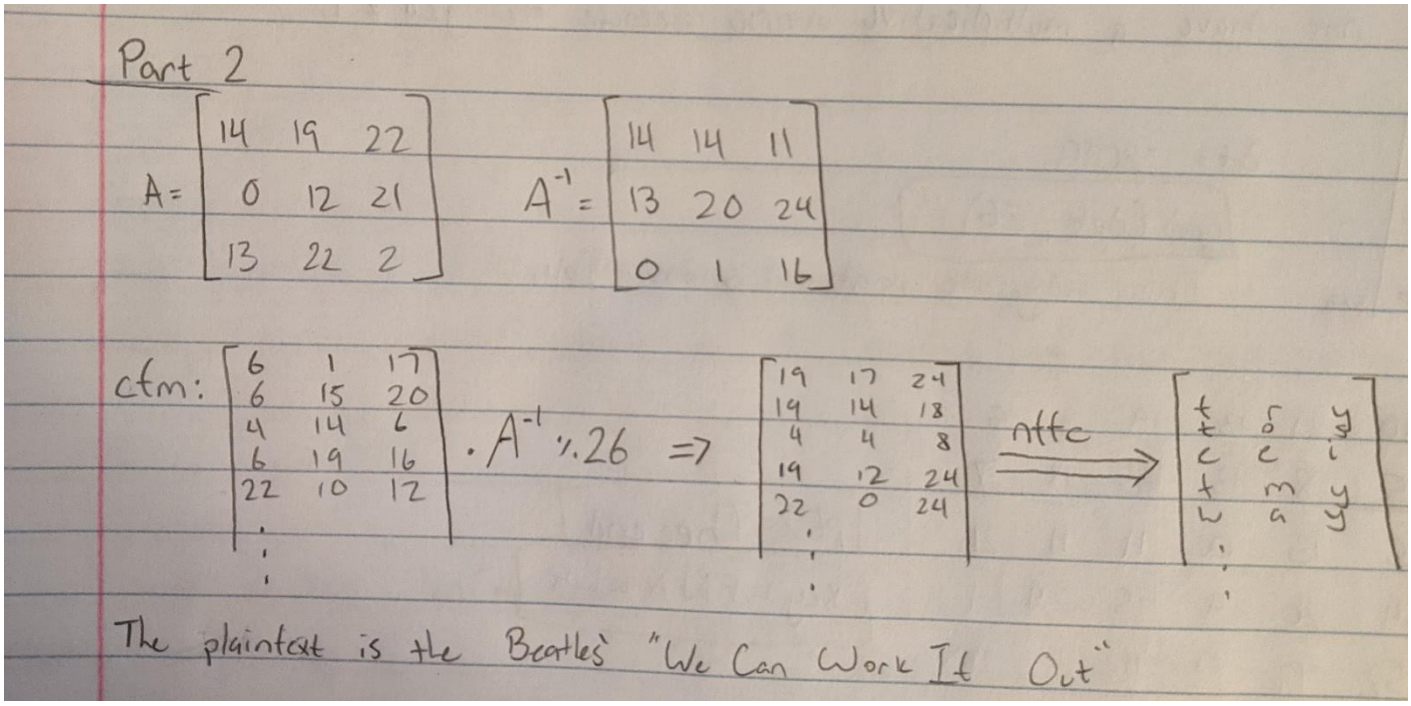


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Cipher Text:
GBRGPUEOGGTQWKMQLMHXOEOVKOAPLATFYXAYGYBYXVPMSGNAOWBHDGEWWUIURSIYY
Cipher Text Matrix Numbers:
[[6, 1, 17], [6, 15, 20], [4, 14, 6], [6, 19, 16], [22, 10, 12],
Plain Text Matrix Numbers:
[[19 17 24]
 [19 14 18]
 [ 4  4  8]
 [19 12 24]
 [22  0 24]
Plain Text:
TRYTOSEEITMYWAYDOIHAVETOKEEPONTALKINGTILLICANTGOONWHILEYOUSEEITYO
```

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TRY TO SEE IT MY WAY.

DO I HAVE TO KEEP ON TALKING 'TILL I CAN'T GO ON WHILE YOU SEE IT YOUR WAY?

RUN THE RISK OF KNOWING THAT OUR LOVE MAY SOON BE GONE.

WE CAN WORK IT OUT. WE CAN WORK IT OUT.

THINK OF WHAT YOU'RE SAYING.

YOU CAN GET IT WRONG, AND STILL YOU THINK THAT IT'S ALRIGHT.

THINK OF WHAT I'M SAYING.

WE CAN WORK IT OUT AND GET IT STRAIGHT OR SAY GOODNIGHT.

WE CAN WORK IT OUT. WE CAN WORK IT OUT.

LIFE IS VERY SHORT, AND THERE'S NO TIME FOR FUSSING AND FIGHTING, MY FRIEND.

I HAVE ALWAYS THOUGHT THAT IT'S A CRIME, SO I WILL ASK YOU ONCE AGAIN.

AND NOW MY LIFE HAS CHANGED IN OH SO MANY WAYS.

MY INDEPENDENCE SEEMS TO VANISH IN THE HAZE, BUT EVERY NOW AND THEN I FEEL SO INSECURE.

I KNOW THAT I JUST NEED YOU LIKE I'VE NEVER DONE BEFORE.

HELP ME IF YOU CAN; I'M FEELING DOWN, AND I DO APPRECIATE YOU BEING ROUND.

HELP ME GET MY FEET BACK ON THE GROUND.

WON'T YOU PLEASE, PLEASE HELP ME.

WHEN I WAS YOUNGER, SO MUCH YOUNGER THAN TODAY, I NEVER NEEDED ANYBODYS HELP IN ANY WAY.

BUT NOW THESE DAYA ARE GONE.

I'M NOT SO SELF-ASSURED NOW.

IF IN D I'VE CHANGED MY MIND AND OPENED UP THE DOORS.

HELP ME IF YOU CAN I'M FEELING DOWN, AND I DO APPRECIATE YOU BEING ROUND.

HELP ME GET MY FEET BACK ON THE GROUND.

WON'T YOU PLEASE, PLEASE HELP ME. HELP ME. HELP ME, OH.

DO YOU RECOGNIZE THE PLAINTEXT?

Q