These corrections are from 
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1. Page 1. Abstract: Say $W$ is in $N_+$ 
   I JUST MADE IT $N$

2. Page 6. equation may be 
   $a(j - 1) + 1 - (a(i - 1) + 1) = a(j - i)$ 
   missing brackets DONE

3. Page 7. the title Upper Bounds on $W(ax; 2)$ could be changed. You 
   actually prove all cases of linear polynomial. DONE

4. Page 8. I would suggest writing 
   $3(a + b), 3(4a + 2b), 9a + 3b$ 
   for clarity that you use the $3d$ forbidden distance argument 
   DONE- but a bit diff from what you suggest.

5. Page 10. I would remove the sentence 
   We needed $y \leq 2a - 1$ since we needed $y + (6a - 2) \leq 8a - 3$. 
   The key argument in my opinion is the one exposed below: 
   $2a - 1$ is a forbidden distance. 
   IT IS IMPORTANT THAT $y \leq 2a - 1$. EVEN SO, I NEED TO SAY 
   WHY ITS IMPORTANT. SO I MODIFIED THIS- TAKE A LOOK.

6. Theorem 5.2. I would add that because $1^2 = 1$ you can never find two 
   consecutive numbers mapped with the same colour. 
   An argument that is used namely in ”19:” the argument here could be 
   more detailed: 
   $19 - 18 = 1^2$ IMPLIES COL(19) is not B 
   $19 - 10 = 3^3$ IMPLIES COL(19) is not R 
   therefore COL(19)=$G$ 
   DONE, THOUGH WORDED A BIT DIFF. TAKE A LOOK.

in (c) I would write
\[ 1 + b \leq x \]
instead of \( b < x \) (although it is the same!) for consistency with (a) and (b) where you never use \( i \).

DONE

8. Page 15; Lemma 6.3.

\[ s + 2b + 1 \leq n \]
is a typo. Should be
\[ s + 2b + 1 < w \]
I think. That can’t be true therefore
\[ s + 2b + 1 \geq w. \]

THIS LEAD TO A MINOR COSMETIC CHANGE IN OTHER PARTS OF THE PAPER BUT THEN ALSO A PROBLEM.

COSMETIC: I WAS SOMETIMES USING [\( n \)]. THIS IS BAD - I KNOW ALWAYS USE [\( w \)]

PROBLEM: I REWROTE THE PROOF TO MAKE IT CLEARER BUT THEN AN ODD THING HAPPENED. ITS LOOKS LIKE I CAN GET \( w \leq s + 2b \). PLEASE TAKE A LOOK AND SEE WHAT YOU THINK. I DONT THINK THIS IS POSSIBLE.

9. Page 17: By Lemma 6.2b, \( 2p(x_0) + p(y) \ldots \) y should be \( y_0 \). DONE.

10. Page 17, end of proof Theorem 6.5.

(a) one-sided boundary condition \( 2(p(x_0) + p(y_0)) = \bigtriangledown (a^5b^2) \).
I suggest removing = \( \bigtriangledown (a^5b^2) \); it is not needed there.
DONE

(b) So \( W(p(x); 3) \leq \ldots \)
I am guessing that lemma 6.3 is used here
if this is the case that should be said; and all conditions of its application should be checked. That said, shouldn’t it be \( W(p(x); 3) \leq p(db) + 2 \cdot 2(p(x_0) + p(y_0)) + 1? \)
(application of lemma 6.3) and then
\[ p(db) + 2 \cdot 2(p(x_0) + p(y_0)) + 1 = \bigtriangledown (a^5b^2). \]
doesn’t change the conclusion. (also to add the argument that if you have a one-sided boundary condition then you obviously have a two sided boundary condition) * if this is not the case; the actual argument should be given


\[ \text{and hence is } \leq d; \]

in between wording and math. \textit{and hence is less than d}

DISAGREE. I would need to write \textit{and hence is less-than-or-equal to d}. I do not mind mixing the math when needed.

12. Page 18. Claim. First of all I want to say that I haven’t checked these results

(*) Just looking at 2. 3. and 4. seems strange to me.

4. says for all \( a \), \( gcd(2a + 1, 2a^2 + 1) = 1 \)

3. says if \( a = 1 \pmod{3} \) then \( gcd(2a + 1, 2a^2 + 1) = 3 \)

Then 3. seems to be in contradiction with 4.

13. Page 19,

(a) \textit{that the gcd is } \leq \text{ should be written that the greatest common divisor is less}

(b) Why not give the linear combinations here? That would help the reader, especially in light of (12) otherwise the reader may doubt the accuracy of the results. I believe that is all correct but maybe requires more evidence.

For example \( gcd(2a + 1, a + 1) = 1 \) because \( 2(a + 1) - (2a + 1) = 1 \) and Theorem de Bachet Bezout.

(c) By the claim: for all \( a, binZ, gcd(\ldots) \leq 6 \) brackets are missing

14. Page 20,

"Each equation is a Pythagorean triple"… Not in the way that the system is written. I suggest removing the equations involving \( w \) and to replace them by the actual Pythagorean equations Would be nice to say and to show in the graphic that we actually impose \( x < y < z < w \)
\[ c^2 + f^2 = e^2 \]
\[ b^2 + f^2 = d^2 \]
\[ a^2 + c^2 = b^2 \]

is my guess to replace equations with \( w \).

15. Thinking about theorem 5.2 \( W(x^2; 3) = 29 \). I think there is also a \textsc{force-five} argument for values between 4 and 19.

Indeed
\[ 9 = 4 + 1 + 4. \quad (3^2 = 2^2 + 1^2 + 2^2) \]

Therefore
If we write this sequence to fix ideas
\[ X \ X+1 \ X+2 \ X+3 \ X+4 \ X+5 \ X+6 \ X+7 \ X+8 \ X+9 \]
If \( X \) is R and \( X+9 \) is B (Arbitrarily) then \( X+4 \) is G or B and \( X+5=X+9-4 \) is G or R. But \( X+4 \) and \( X+5 \) are different they can’t be both G. There should be \( X+4 \) is B and \( X+5 \) is R and we get the \textsc{force-five}.

SEE MY COMMENT ON ONE-PAGE DOCUMENT forcefive.pdf and forcefive.tex.