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CORRECTION

Correction to: Dynamical behavior of rational difference equation $x_{n+1} = \frac{x_{n-17}}{\pm 1 \pm x_{n-2}x_{n-5}x_{n-8}x_{n-11}x_{n-14}x_{n-17}}$

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Correction to: Bol. Soc. Mat. Mex. (2021) 27:49 https://doi.org/10.1007/s40590-021-00357-9

Unfortunately, the equations on page 6, 7, 9, 11, 13, 15–18 were published incorrectly. The correct equations are given below.

The original article can be found online at https://doi.org/10.1007/s40590-021-00357-9.

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Page 6 Theorem 2:

$$x_{18n-17}=\frac{z\prod_{i=0}^{n-1}(1+6icfjpuz)}{\prod_{i=0}^{n-1}(1+(6i+1)cfjpuz)},\quad x_{18n-16}=\frac{y\prod_{i=0}^{n-1}(1+6ibehmsy)}{\prod_{i=0}^{n-1}(1+(6i+1)behmsy)},$$

$$x_{18n-15}=\frac{v\prod_{i=0}^{n-1}(1+6iadgkrv)}{\prod_{i=0}^{n-1}(1+(6i+1)adgkrv)},\quad x_{18n-14}=\frac{u\prod_{i=0}^{n-1}(1+(6i+1)cfjpuz)}{\prod_{i=0}^{n-1}(1+(6i+2)cfjpuz)},$$

$$x_{18n-13}=\frac{s\prod_{i=0}^{n-1}(1+(6i+1)behmsy)}{\prod_{i=0}^{n-1}(1+(6i+2)behmsy)},\quad x_{18n-12}=\frac{r\prod_{i=0}^{n-1}(1+(6i+1)adgkrv)}{\prod_{i=0}^{n-1}(1+(6i+2)adgkrv)},$$

$$x_{18n-11}=\frac{p\prod_{i=0}^{n-1}(1+(6i+2)cfjpuz)}{\prod_{i=0}^{n-1}(1+(6i+3)cfjpuz)},\quad x_{18n-10}=\frac{m\prod_{i=0}^{n-1}(1+(6i+2)behmsy)}{\prod_{i=0}^{n-1}(1+(6i+3)behmsy)},$$

$$x_{18n-9}=\frac{k\prod_{i=0}^{n-1}(1+(6i+2)adgkrv)}{\prod_{i=0}^{n-1}(1+(6i+3)adgkrv)},\quad x_{18n-8}=\frac{j\prod_{i=0}^{n-1}(1+(6i+3)cfjpuz)}{\prod_{i=0}^{n-1}(1+(6i+4)cfjpuz)},$$

$$x_{18n-7}=\frac{h\prod_{i=0}^{n-1}(1+(6i+3)behmsy)}{\prod_{i=0}^{n-1}(1+(6i+4)behmsy)},\quad x_{18n-6}=\frac{g\prod_{i=0}^{n-1}(1+(6i+3)adgkrv)}{\prod_{i=0}^{n-1}(1+(6i+4)adgkrv)},$$

$$x_{18n-5}=\frac{f\prod_{i=0}^{n-1}(1+(6i+4)cfjpuz)}{\prod_{i=0}^{n-1}(1+(6i+5)cfjpuz)},\quad x_{18n-4}=\frac{e\prod_{i=0}^{n-1}(1+(6i+4)behmsy)}{\prod_{i=0}^{n-1}(1+(6i+5)behmsy)},$$

$$x_{18n-3}=\frac{d\prod_{i=0}^{n-1}(1+(6i+4)adgkrv)}{\prod_{i=0}^{n-1}(1+(6i+5)adgkrv)},\quad x_{18n-2}=\frac{c\prod_{i=0}^{n-1}(1+(6i+5)cfjpuz)}{\prod_{i=0}^{n-1}(1+(6i+6)cfjpuz)},$$

$$x_{18n-1}=\frac{b\prod_{i=0}^{n-1}(1+(6i+5)behmsy)}{\prod_{i=0}^{n-1}(1+(6i+6)behmsy)},\quad x_{18n}=\frac{a\prod_{i=0}^{n-1}(1+(6i+5)adgkrv)}{\prod_{i=0}^{n-1}(1+(6i+6)adgkrv)},$$

Page 7:

$$x_{18n-35}=\frac{z\prod_{i=0}^{n-2}(1+6icfjpuz)}{\prod_{i=0}^{n-2}(1+(6i+1)cfjpuz)},\quad x_{18n-34}=\frac{y\prod_{i=0}^{n-2}(1+6ibehmsy)}{\prod_{i=0}^{n-2}(1+(6i+1)behmsy)},$$

$$x_{18n-33}=\frac{v\prod_{i=0}^{n-2}(1+6iadgkrv)}{\prod_{i=0}^{n-2}(1+(6i+1)adgkrv)},\quad x_{18n-32}=\frac{u\prod_{i=0}^{n-2}(1+(6i+1)cfjpuz)}{\prod_{i=0}^{n-2}(1+(6i+2)cfjpuz)},$$

$$x_{18n-31}=\frac{s\prod_{i=0}^{n-2}(1+(6i+1)behmsy)}{\prod_{i=0}^{n-2}(1+(6i+2)behmsy)},\quad x_{18n-30}=\frac{r\prod_{i=0}^{n-2}(1+(6i+1)adgkrv)}{\prod_{i=0}^{n-2}(1+(6i+2)adgkrv)},$$

$$x_{18n-29}=\frac{p\prod_{i=0}^{n-2}(1+(6i+2)cfjpuz)}{\prod_{i=0}^{n-2}(1+(6i+3)cfjpuz)},\quad x_{18n-28}=\frac{m\prod_{i=0}^{n-2}(1+(6i+2)behmsy)}{\prod_{i=0}^{n-2}(1+(6i+3)behmsy)},$$

$$x_{18n-27}=\frac{k\prod_{i=0}^{n-2}(1+(6i+2)adgkrv)}{\prod_{i=0}^{n-2}(1+(6i+3)adgkrv)},\quad x_{18n-26}=\frac{j\prod_{i=0}^{n-2}(1+(6i+3)cfjpuz)}{\prod_{i=0}^{n-2}(1+(6i+4)cfjpuz)},$$

$$x_{18n-25}=\frac{h\prod_{i=0}^{n-2}(1+(6i+3)behmsy)}{\prod_{i=0}^{n-2}(1+(6i+4)behmsy)},\quad x_{18n-24}=\frac{g\prod_{i=0}^{n-2}(1+(6i+3)adgkrv)}{\prod_{i=0}^{n-2}(1+(6i+4)adgkrv)},$$

$$x_{18n-23}=\frac{f\prod_{i=0}^{n-2}(1+(6i+4)cfjpuz)}{\prod_{i=0}^{n-2}(1+(6i+5)cfjpuz)},\quad x_{18n-22}=\frac{e\prod_{i=0}^{n-2}(1+(6i+4)behmsy)}{\prod_{i=0}^{n-2}(1+(6i+5)behmsy)},$$

$$x_{18n-21}=\frac{d\prod_{i=0}^{n-2}(1+(6i+4)adgkrv)}{\prod_{i=0}^{n-2}(1+(6i+5)adgkrv)},\quad x_{18n-20}=\frac{c\prod_{i=0}^{n-2}(1+(6i+5)cfjpuz)}{\prod_{i=0}^{n-2}(1+(6i+6)cfjpuz)},$$

$$x_{18n-19}=\frac{b\prod_{i=0}^{n-2}(1+(6i+5)behmsy)}{\prod_{i=0}^{n-2}(1+(6i+6)behmsy)},\quad x_{18n-18}=\frac{a\prod_{i=0}^{n-2}(1+(6i+5)adgkrv)}{\prod_{i=0}^{n-2}(1+(6i+6)adgkrv)}.$$

Page 9:

$$f_l(l,o,t,w,\alpha,\beta)=\frac{1}{(1+lotw\alpha\beta)^2},\quad f_o(l,o,t,w,\alpha,\beta)=\frac{-l^2tw\alpha\beta}{(1+lotw\alpha\beta)^2},$$
$$f_t(l,o,t,w,\alpha,\beta)=\frac{-l^2ow\alpha\beta}{(1+lotw\alpha\beta)^2},\quad f_w(l,o,t,w,\alpha,\beta)=\frac{-l^2ot\alpha\beta}{(1+lotw\alpha\beta)^2},$$
$$f_\alpha(l,o,t,w,\alpha,\beta)=\frac{-l^2owt\beta}{(1+lotw\alpha\beta)^2},\quad f_\beta(l,o,t,w,\alpha,\beta)=\frac{-l^2otw\alpha}{(1+lotw\alpha\beta)^2}.$$

Page 9:

$$f_l(\overline{x},\overline{x},\overline{x},\overline{x},\overline{x},\overline{x})=1,\quad f_o(\overline{x},\overline{x},\overline{x},\overline{x},\overline{x},\overline{x})=0,\quad f_t(\overline{x},\overline{x},\overline{x},\overline{x},\overline{x},\overline{x})=0,$$
$$f_w(\overline{x},\overline{x},\overline{x},\overline{x},\overline{x},\overline{x})=0,\quad f_\alpha(\overline{x},\overline{x},\overline{x},\overline{x},\overline{x},\overline{x})=0,\quad f_\beta(\overline{x},\overline{x},\overline{x},\overline{x},\overline{x},\overline{x})=0.$$

Page 9 Example 1:

$x_{-17}=3.5,\quad x_{-14}=3.4,\quad x_{-15}=0.7,\quad x_{-14}=3.2,\quad x_{-13}=3.1,\quad x_{-12}=0.6,$
$x_{-11}=2.9,\quad x_{-10}=2.85,\quad x_{-9}=0.5,\quad x_{-8}=2.75,\quad x_{-7}=2.7,\quad x_{-6}=0.4,$
$x_{-5}=2.6,\quad x_{-4}=2.55,\quad x_{-3}=0.3,\quad x_{-2}=2.45,\quad x_{-1}=2.4,\quad x_0=0.2.$

Page 9 Example 2:

$x_{-17}=15,\quad x_{-14}=14,\quad x_{-15}=7,\quad x_{-14}=12,\quad x_{-13}=1.1,\quad x_{-12}=6,$
$x_{-11}=20,\quad x_{-10}=18,\quad x_{-9}=5,\quad x_{-8}=13,\quad x_{-7}=17,\quad x_{-6}=4,$
$x_{-5}=1.6,\quad x_{-4}=1.55,\quad x_{-3}=3,\quad x_{-2}=1.45,\quad x_{-1}=1.4,\quad x_0=2.$

Page 11 Theorem 5:

$$x_{18n-17} = \frac{z\prod_{i=0}^{n-1}(1-6icfjpuz)}{\prod_{i=0}^{n-1}(1-(6i+1)cfjpuz)}, \quad x_{18n-16} = \frac{y\prod_{i=0}^{n-1}(1-6ibehmsy)}{\prod_{i=0}^{n-1}(1-(6i+1)behmsy)},$$

$$x_{18n-15} = \frac{v\prod_{i=0}^{n-1}(1-6iadgkrv)}{\prod_{i=0}^{n-1}(1-(6i+1)adgkrv)}, \quad x_{18n-14} = \frac{u\prod_{i=0}^{n-1}(1-(6i+1)cfjpuz)}{\prod_{i=0}^{n-1}(1-(6i+2)cfjpuz)},$$

$$x_{18n-13} = \frac{s\prod_{i=0}^{n-1}(1-(6i+1)behmsy)}{\prod_{i=0}^{n-1}(1-(6i+2)behmsy)}, \quad x_{18n-12} = \frac{r\prod_{i=0}^{n-1}(1-(6i+1)adgkrv)}{\prod_{i=0}^{n-1}(1-(6i+2)adgkrv)},$$

$$x_{18n-11} = \frac{p\prod_{i=0}^{n-1}(1-(6i+2)cfjpuz)}{\prod_{i=0}^{n-1}(1-(6i+3)cfjpuz)}, \quad x_{18n-10} = \frac{m\prod_{i=0}^{n-1}(1-(6i+2)behmsy)}{\prod_{i=0}^{n-1}(1-(6i+3)behmsy)},$$

$$x_{18n-9} = \frac{k\prod_{i=0}^{n-1}(1-(6i+2)adgkrv)}{\prod_{i=0}^{n-1}(1-(6i+3)adgkrv)}, \quad x_{18n-8} = \frac{j\prod_{i=0}^{n-1}(1-(6i+3)cfjpuz)}{\prod_{i=0}^{n-1}(1-(6i+4)cfjpuz)},$$

$$x_{18n-7} = \frac{h\prod_{i=0}^{n-1}(1-(6i+3)behmsy)}{\prod_{i=0}^{n-1}(1-(6i+4)behmsy)}, \quad x_{18n-6} = \frac{g\prod_{i=0}^{n-1}(1-(6i+3)adgkrv)}{\prod_{i=0}^{n-1}(1-(6i+4)adgkrv)},$$

$$x_{18n-5} = \frac{f\prod_{i=0}^{n-1}(1-(6i+4)cfjpuz)}{\prod_{i=0}^{n-1}(1-(6i+5)cfjpuz)}, \quad x_{18n-4} = \frac{e\prod_{i=0}^{n-1}(1-(6i+4)behmsy)}{\prod_{i=0}^{n-1}(1-(6i+5)behmsy)},$$

$$x_{18n-3} = \frac{d\prod_{i=0}^{n-1}(1-(6i+4)adgkrv)}{\prod_{i=0}^{n-1}(1-(6i+5)adgkrv)}, \quad x_{18n-2} = \frac{c\prod_{i=0}^{n-1}(1-(6i+5)cfjpuz)}{\prod_{i=0}^{n-1}(1-(6i+6)cfjpuz)},$$

$$x_{18n-1} = \frac{b\prod_{i=0}^{n-1}(1-(6i+5)behmsy)}{\prod_{i=0}^{n-1}(1-(6i+6)behmsy)}, \quad x_{18n} = \frac{a\prod_{i=0}^{n-1}(1-(6i+5)adgkrv)}{\prod_{i=0}^{n-1}(1-(6i+6)adgkrv)},$$

Page 11 Example 3:

$$x_{-17} = 5, \quad x_{-14} = 11, \quad x_{-15} = 4, \quad x_{-14} = 14, \quad x_{-13} = 20, \quad x_{-12} = 9,$$
$$x_{-11} = 3, \quad x_{-10} = 12, \quad x_{-9} = 7, \quad x_{-8} = 21, \quad x_{-7} = 8, \quad x_{-6} = 30,$$
$$x_{-5} = 27, \quad x_{-4} = 19, \quad x_{-3} = 29, \quad x_{-2} = 28, \quad x_{-1} = 6, \quad x_0 = 2.$$

Page 11 Example 4:

$$x_{-17} = 3.5, \quad x_{-14} = 3.4, \quad x_{-15} = 0.7, \quad x_{-14} = 3.2, \quad x_{-13} = 3.1, \quad x_{-12} = 0.6,$$
$$x_{-11} = 2.9, \quad x_{-10} = 2.85, \quad x_{-9} = 0.5, \quad x_{-8} = 2.75, \quad x_{-7} = 2.7, \quad x_{-6} = 0.4,$$
$$x_{-5} = 2.6, \quad x_{-4} = 2.55, \quad x_{-3} = 0.3, \quad x_{-2} = 2.45, \quad x_{-1} = 2.4, \quad x_0 = 0.2.$$

Page 13 Theorem 7:

$$x_{18n-17} = \frac{z}{(cfjpuz-1)^n}, \quad x_{18n-16} = \frac{y}{(behmsy-1)^n},$$
$$x_{18n-15} = \frac{v}{(adgkrv-1)^n}, \quad x_{18n-14} = u(cfjpuz-1)^n,$$
$$x_{18n-13} = s(behmsy-1)^n, \quad x_{18n-12} = r(adgkrv-1)^n,$$
$$x_{18n-11} = \frac{p}{(cfjpuz-1)^n}, \quad x_{18n-10} = \frac{m}{(behmsy-1)^n},$$
$$x_{18n-9} = \frac{k}{(adgkrv-1)^n}, \quad x_{18n-8} = j(cfjpuz-1)^n,$$
$$x_{18n-7} = h(behmsy-1)^n, \quad x_{18n-6} = g(adgkrv-1)^n,$$
$$x_{18n-5} = \frac{f}{(cfjpuz-1)^n}, \quad x_{18n-4} = \frac{e}{(behmsy-1)^n},$$
$$x_{18n-3} = \frac{d}{(adgkrv-1)^n}, \quad x_{18n-2} = c(cfjpuz-1)^n,$$
$$x_{18n-1} = b(behmsy-1)^n, \quad x_{18n} = a(adgkrv-1)^n.$$

Page 15 Example 5:

$x_{-17} = 0.3, \quad x_{-16} = 0.2, \quad x_{-15} = 0.1, \quad x_{-14} = 0.25, \quad x_{-13} = 028, \quad x_{-12} = 0.18,$
$x_{-11} = 0.8, \quad x_{-10} = 0.26, \quad x_{-9} = 0.16, \quad x_{-8} = 0.6, \quad x_{-7} = 0.24, \quad x_{-6} = 0.14,$
$x_{-5} = 0.4, \quad x_{-4} = 0.22, \quad x_{-3} = 0.12, x_{-2} = 0.9, \quad x_{-1} = 0.7, \quad x_0 = 1.5.$

Page 15 Example 6:

$x_{-17} = 0.3, \quad x_{-16} = 0.2, \quad x_{-15} = 1.1, \quad x_{-14} = 1.25, \quad x_{-13} = 028, \quad x_{-12} = 0.18,$
$x_{-11} = 0.8, \quad x_{-10} = 1.26, \quad x_{-9} = 0.16, \quad x_{-8} = 0.6, \quad x_{-7} = 1.24, \quad x_{-6} = 1.14,$
$x_{-5} = 0.4, \quad x_{-4} = 1.22, \quad x_{-3} = 0.12, \quad x_{-2} = 0.9, \quad x_{-1} = 0.7, \quad x_0 = 1.5.$

Page 16 Theorem 10:

$$x_{18n-17}=\frac{z}{(-cfjpuz-1)^{n}},\quad x_{18n-16}=\frac{y}{(-behmsy-1)^{n}},$$
$$x_{18n-15}=\frac{v}{(-adgkrv-1)^{n}},\quad x_{18n-14}=u(-cfjpuz-1)^{n},$$
$$x_{18n-13}=s(-behmsy-1)^{n},\quad x_{18n-12}=r(-adgkrv-1)^{n},$$
$$x_{18n-11}=\frac{p}{(-cfjpuz-1)^{n}},\quad x_{18n-10}=\frac{m}{(-behmsy-1)^{n}},$$
$$x_{18n-9}=\frac{k}{(-adgkrv-1)^{n}},\quad x_{18n-8}=j(-cfjpuz-1)^{n},$$
$$x_{18n-7}=h(-behmsy-1)^{n},\quad x_{18n-6}=g(-adgkrv-1)^{n},$$
$$x_{18n-5}=\frac{f}{(-cfjpuz-1)^{n}},\quad x_{18n-4}=\frac{e}{(-behmsy-1)^{n}},$$
$$x_{18n-3}=\frac{d}{(-adgkrv-1)^{n}},\quad x_{18n-2}=c(-cfjpuz-1)^{n},$$
$$x_{18n-1}=b(-behmsy-1)^{n},\quad x_{18n}=a(-adgkrv-1)^{n},$$

Page 17 Example 7:

$x_{-17}=0.3,\quad x_{-16}=0.2,\quad x_{-15}=1.1,\quad x_{-14}=1.25,\quad x_{-13}=0.28,\quad x_{-12}=2.18,$
$x_{-11}=0.8,\quad x_{-10}=1.26,\quad x_{-9}=0.16,\quad x_{-8}=0.6,\quad x_{-7}=1.24,\quad x_{-6}=2.14,$
$x_{-5}=0.4,\quad x_{-4}=1.22,\quad x_{-3}=0.12,\quad x_{-2}=0.9,\quad x_{-1}=0.7,\quad x_{0}=1.5.$

Page 18 Example 8:

$x_{-17}=0.9,\quad x_{-16}=0.8,\quad x_{-15}=0.7,\quad x_{-14}=0.6,\quad x_{-13}=0.55,\quad x_{-12}=0.52,$
$x_{-11}=0.51,\quad x_{-10}=0.49,\quad x_{-9}=0.47,\quad x_{-8}=0.45,\quad x_{-7}=0.43,\quad x_{-6}=0.41,$
$x_{-5}=0.39,\quad x_{-4}=0.37,\quad x_{-3}=0.35,\quad x_{-2}=0.33,\quad x_{-1}=0.31,\quad x_{0}=0.29.$