$$\underline{l_n > l_{n-1}}$$

$$\frac{n(2n+1)x + n\sqrt{4n(n+1)(x^2-1)+x^2}}{\cancel{2n(n+1)}} > \frac{(2n-1)^{(n+1)}x + {}^{(n+1)}\sqrt{4n(n-1)(x^2-1)+x^2}}{n}$$

$$x + n\sqrt{4n(n+1)(x^2-1)+x^2} > (n+1)\sqrt{}$$

$$\cancel{x^2} + \cancel{2n}x\sqrt{} + \cancel{4n^2(n+1)(x^2-1)} + \cancel{n^2x^2} > (n+1)^2 \cdot 4n(n-1)(x^2-1) + \cancel{2n}x^2$$

$$+ 2n(n+1)(x^2-1) \qquad \cancel{4n(n+1)(n-1)(x^2-1)}$$

$$x\sqrt{4(n+1)} > x^2 + 2(n+1)(x^2-1)$$

$$\frac{(2n+1)x - n\sqrt{}}{\cancel{2n(n+1)}} > \frac{(2n-1)^{(n+1)}x - {}^{(n+1)}\sqrt{}}{\cancel{2n}}$$

$$\cancel{x > n\sqrt{}}$$

$$x + (n+1)\sqrt{4n(n-1)(x^2-1)+x^2} > n\sqrt{4n(n+1)(x^2-1)+x^2}$$

$$\cancel{2(n+1)}x^2 + 2x(n+1)\sqrt{} + (n+1)^2\,\cancel{4n(n-1)(x^2-1)}$$

$$> \cancel{4n^2(n+1)(x^2-1)} + \cancel{n^2}$$

$$l_n > l_{n-1}$$

$$\lambda_n - l_n \qquad l_{n-1} - \lambda_{n-1}$$

Monsieur, [illegible] les épreuves de la géométrie [illegible]

~~cependant~~ [illegible] feuilles [illegible] ; [illegible] il est inutile de [illegible]

[illegible] Vous pouvez [illegible] l'imprimer [illegible]

Afin de tout [illegible] sous ma responsabilité [illegible]

Du reste, si vous [illegible] la feuille, il faut que le bon à tirer [illegible] Les fautes [illegible]

$$\frac{n(2n+1)x \pm^{3}\sqrt{}}{\cancel{}} > \frac{(2n-1)^{(n+1)}x \pm^{3}\sqrt{}}{\cancel{n}}$$

$2n^2+n-(2n^2+n-1)$

$$\cancel{x} \quad x > \mp n\sqrt{4n(n+1)(x^2-1)+x^2} \pm (n+1)\sqrt{4n(n-1)(x^2-1)+x^2}$$

$$x \pm n\sqrt{} > -$$

$$\cancel{x^2} \pm 2xn\sqrt{4n(n+1)(x^2-1)+x^2} + n^2\left[\cancel{4n(n+1)(x^2-1)+x^2}\right] >$$

$$> (n+1)^2\left[4n(n-1)(x^2-1)+\cancel{x^2}\right] - 4n^3(n+1)(x^2-1) -$$

$$+2nx^2 \qquad \cancel{=(n^2+1)x^2}$$

n^2-1-

$$\pm \cancel{2}x\cancel{n}\sqrt{4n(n+1)(x^2-1)+x^2} > \cancel{2}(n+1)(x^2-1) + \cancel{n}x^2$$

$$\mp x\sqrt{4n(n+1)(x^2-1)+x^2} < \cancel{x^2} + 2(n+1)(x^2-1) - x^2.$$

$$l_n = \frac{(2n+1)x \pm 2\sqrt{n(n+1)}\cdot\sqrt{x^2-1}\left[1+\frac{x^2}{8n(n+1)(x^2-1)}+\dots\right.}{2(n+1)} \qquad \sqrt{\cancel{x^2-1}+\frac{x^2}{4n(n+1)(x^2-1)}}$$

4.7.3

$$l_n + \frac{1}{l_{n+1}}$$

$$\frac{5x-\sqrt{24(x^2-1)+x^2}}{3} > \frac{3x-\sqrt{9x^2-8}}{2} \qquad (n+1)l_n + \frac{n}{l_n} = (2n+1)x > nl_{n-1} + \frac{n-1}{l_{n-1}}$$

$$10x - 2\sqrt{24(x^2-1)+x^2} > 9x - 3\sqrt{9x^2-8} \qquad \cancel{(n+1)l_n - nl_{n+1} +}$$

$$x > 2\sqrt{24(x^2-1)+x^2} - 3\sqrt{9x^2-8}$$