$$S = (1/3 + 1/5) + (1/5 + 1/7) + \cdots + (1/32717 + 1/32719)$$

be the sum of the sum of the reciprocals of all twin primes below 2^{15}. Indicate which of the following inequalities is true:

(a) $S < \pi^2/6$ (b) $\pi^2/6 < S < \sqrt{e}$ (c) $\sqrt{e} < S$.

Solutions by Paul Sands, Student, University of New Mexico, Albuquerque, New Mexico, and the proposer. (Both used electronic computers.)

	Proposer	Paul Sands
True inequality	(b)	(b)
Number of pairs of primes involved	55	55
S, to six decimal places	1.647986	1.648627

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(Continued from p. 210.)

6. $$T_n = -(-i)^n$$

7. $$T_{n+1} = 5T_n - 6T_{n-1}$$
$$T_n = 2^n + 3^{n-1}$$

8. $$r = \frac{5 + \sqrt{29}}{2}, \qquad s = \frac{5 - \sqrt{29}}{2}$$
$$T_n = \frac{r^n - s^n}{\sqrt{29}} \text{ with terms } 1, 5, 26, 135, \cdots$$
$$V_n = r^n + s^n \text{ with terms } 5, 27, 140, \cdots$$

9. $$r = \frac{3 + i\sqrt{11}}{2}, \qquad s = \frac{3 - i\sqrt{11}}{2}$$
$$T_n = \left(\frac{33 - 16i\sqrt{11}}{55}\right)r^n + \left(\frac{33 + 16i\sqrt{11}}{55}\right)s^n$$

10. $$T_{n+1} = 5T_n + 2T_{n-1}; \quad T_1 = 3, \quad T_2 = 7.$$

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