

Pensieve header: A computation for Paul Selick. "tp" was generated by C:\drorbn\PrivatePensieve\People\Selick\flc.m.

$$\begin{aligned} \text{tp} = & \left((6 + 12 \text{ i}) (324 - 324 \text{ a} + 81 \text{ a}^2 + 16 \text{ ttt}^2) \right. \\ & \left((36 - 198 \text{ i}) \text{ a}^2 + \text{ a} ((-126 + 693 \text{ i}) + (296 + 148 \text{ i}) \text{ x} - (148 - 296 \text{ i}) \text{ y}) - \right. \\ & \left. 6 ((-18 + 99 \text{ i}) + (98 + 49 \text{ i}) \text{ x} - (49 - 98 \text{ i}) \text{ y}) \right) (24 \text{ x} - 7 \text{ y}) \left(2 \sqrt{\text{x}^2 + \text{y}^2} + \right. \\ & \left. \sqrt{5} \sqrt{(405 + 180 \text{ a}^2 + 252 \text{ x} + 500 \text{ x}^2 + 864 \text{ y} + 500 \text{ y}^2 - 12 \text{ a} (45 + 14 \text{ x} + 48 \text{ y}))} \right) \Bigg) / \\ & \left(-8 \text{ ttt} (24 \text{ x} - 7 \text{ y}) (-120 \text{ a}^2 + 5 \text{ a} (345 + 14 \text{ x} + 48 \text{ y}) - 6 (495 + 28 \text{ x} + 96 \text{ y})) + 45 (-2 + \text{ a}) \right. \\ & \left(60 \sqrt{5} \text{ a}^2 \sqrt{(405 + 180 \text{ a}^2 + 252 \text{ x} + 500 \text{ x}^2 + 864 \text{ y} + 500 \text{ y}^2 - 12 \text{ a} (45 + 14 \text{ x} + 48 \text{ y}))} + \right. \\ & \text{ a} \left(1125 \sqrt{\text{x}^2 + \text{y}^2} + 28 \text{ x} \sqrt{\text{x}^2 + \text{y}^2} + 96 \text{ y} \sqrt{\text{x}^2 + \text{y}^2} - \right. \\ & \left. 300 \sqrt{5} \sqrt{(405 + 180 \text{ a}^2 + 252 \text{ x} + 500 \text{ x}^2 + 864 \text{ y} + 500 \text{ y}^2 - 12 \text{ a} (45 + 14 \text{ x} + 48 \text{ y}))} - \right. \\ & \left. 21 \sqrt{5} \text{ x} \sqrt{(405 + 180 \text{ a}^2 + 252 \text{ x} + 500 \text{ x}^2 + 864 \text{ y} + 500 \text{ y}^2 - 12 \text{ a} (45 + 14 \text{ x} + 48 \text{ y}))} - \right. \\ & \left. 72 \sqrt{5} \text{ y} \sqrt{(405 + 180 \text{ a}^2 + 252 \text{ x} + 500 \text{ x}^2 + 864 \text{ y} + 500 \text{ y}^2 - 12 \text{ a} (45 + 14 \text{ x} + 48 \text{ y}))} \right) \Bigg) - \\ & 6 \left(375 \sqrt{\text{x}^2 + \text{y}^2} + 14 \text{ x} \sqrt{\text{x}^2 + \text{y}^2} + 48 \text{ y} \sqrt{\text{x}^2 + \text{y}^2} - 60 \sqrt{5} \right. \\ & \left. \sqrt{(405 + 180 \text{ a}^2 + 252 \text{ x} + 500 \text{ x}^2 + 864 \text{ y} + 500 \text{ y}^2 - 12 \text{ a} (45 + 14 \text{ x} + 48 \text{ y}))} - 7 \sqrt{5} \text{ x} \right. \\ & \left. \sqrt{(405 + 180 \text{ a}^2 + 252 \text{ x} + 500 \text{ x}^2 + 864 \text{ y} + 500 \text{ y}^2 - 12 \text{ a} (45 + 14 \text{ x} + 48 \text{ y}))} - 24 \sqrt{5} \right. \\ & \left. \text{ y} \sqrt{(405 + 180 \text{ a}^2 + 252 \text{ x} + 500 \text{ x}^2 + 864 \text{ y} + 500 \text{ y}^2 - 12 \text{ a} (45 + 14 \text{ x} + 48 \text{ y}))} \right) \Bigg) \Bigg); \end{aligned}$$

$$\text{tp1} = \text{tp} /. \left\{ \sqrt{(405 + 180 \text{ a}^2 + 252 \text{ x} + 500 \text{ x}^2 + 864 \text{ y} + 500 \text{ y}^2 - 12 \text{ a} (45 + 14 \text{ x} + 48 \text{ y}))} \rightarrow \text{r1}, \right. \\ \left. \sqrt{\text{x}^2 + \text{y}^2} \rightarrow \text{r2} \right\}$$

$$\begin{aligned} & \left((6 + 12 \text{ i}) (\sqrt{5} \text{ r1} + 2 \text{ r2}) (324 - 324 \text{ a} + 81 \text{ a}^2 + 16 \text{ ttt}^2) \right. \\ & \left((36 - 198 \text{ i}) \text{ a}^2 + \text{ a} ((-126 + 693 \text{ i}) + (296 + 148 \text{ i}) \text{ x} - (148 - 296 \text{ i}) \text{ y}) - \right. \\ & \left. 6 ((-18 + 99 \text{ i}) + (98 + 49 \text{ i}) \text{ x} - (49 - 98 \text{ i}) \text{ y}) \right) (24 \text{ x} - 7 \text{ y}) \Bigg) / \\ & \left(-8 \text{ ttt} (24 \text{ x} - 7 \text{ y}) (-120 \text{ a}^2 + 5 \text{ a} (345 + 14 \text{ x} + 48 \text{ y}) - 6 (495 + 28 \text{ x} + 96 \text{ y})) + 45 (-2 + \text{ a}) \right. \\ & \left(60 \sqrt{5} \text{ a}^2 \text{ r1} - 6 (-60 \sqrt{5} \text{ r1} + 375 \text{ r2} - 7 \sqrt{5} \text{ r1 x} + 14 \text{ r2 x} - 24 \sqrt{5} \text{ r1 y} + 48 \text{ r2 y}) + \right. \\ & \left. \text{ a} (-300 \sqrt{5} \text{ r1} + 1125 \text{ r2} - 21 \sqrt{5} \text{ r1 x} + 28 \text{ r2 x} - 72 \sqrt{5} \text{ r1 y} + 96 \text{ r2 y}) \right) \Bigg) \end{aligned}$$

$$\begin{aligned}
& \text{FullSimplify}\left[\text{ComplexExpand}[\text{Re}[tp1]] /. \left\{r1 \rightarrow \right. \right. \\
& \quad \left. \left. \sqrt{(405 + 180 a^2 + 252 x + 500 x^2 + 864 y + 500 y^2 - 12 a (45 + 14 x + 48 y))}, r2 \rightarrow \sqrt{x^2 + y^2}\right\}\right] \\
& - \left(12 (81 (-2 + a)^2 + 16 ttt^2) (24 x - 7 y) \right. \\
& \quad \left. (-108 (-2 + a) (-3 + 2 a) + 5 (-147 + 74 a) y) \left(2 \sqrt{x^2 + y^2} + \right. \right. \\
& \quad \left. \left. \sqrt{5} \sqrt{(9 (45 + 28 x + 96 y) + 4 (45 a^2 - 3 a (45 + 14 x + 48 y) + 125 (x^2 + y^2)))}\right)\right) / \\
& \left(-8 ttt (24 x - 7 y) (5 a (345 - 24 a + 14 x + 48 y) - 6 (495 + 28 x + 96 y)) + 45 (-2 + a) \right. \\
& \quad \left(60 \sqrt{5} a^2 \sqrt{(9 (45 + 28 x + 96 y) + 4 (45 a^2 - 3 a (45 + 14 x + 48 y) + 125 (x^2 + y^2)))} + \right. \\
& \quad \left. a \left(75 \left(15 \sqrt{x^2 + y^2} - 4 \sqrt{5} \sqrt{(9 (45 + 28 x + 96 y) + 4 (45 a^2 - 3 a (45 + 14 x + 48 y) + \right. \right. \right. \right. \\
& \quad \quad \left. \left. \left. 125 (x^2 + y^2))}\right)\right) + (7 x + 24 y) \left(4 \sqrt{x^2 + y^2} - 3 \sqrt{5} \right. \right. \\
& \quad \quad \left. \left. \sqrt{(9 (45 + 28 x + 96 y) + 4 (45 a^2 - 3 a (45 + 14 x + 48 y) + 125 (x^2 + y^2))}\right)\right) \right) - \\
& \quad \left. 6 \left(375 \sqrt{x^2 + y^2} - 60 \sqrt{5} \sqrt{(9 (45 + 28 x + 96 y) + 4 (45 a^2 - 3 a (45 + 14 x + 48 y) + \right. \right. \right. \right. \\
& \quad \quad \left. \left. \left. 125 (x^2 + y^2))}\right)\right) + (7 x + 24 y) \left(2 \sqrt{x^2 + y^2} - \right. \right. \\
& \quad \quad \left. \left. \sqrt{5} \sqrt{(9 (45 + 28 x + 96 y) + 4 (45 a^2 - 3 a (45 + 14 x + 48 y) + 125 (x^2 + y^2))}\right)\right) \right) \right)
\end{aligned}$$