

Periodic point

$$x = - \frac{k \sqrt{r^2 - 4} - k r - 2 k}{2 r}$$

$$y = 0$$

Periodic point

$$x = \frac{k \sqrt{r^2 - 4} + k r + 2 k}{2 r}$$

$$y = 0$$

Periodic point

$$\begin{aligned} x = & - \frac{((- \text{abs}(b) k \sqrt{((- 4 d) + b^2 + 2 b + 9) r^2 + ((- 4 b d) + 2 b^2 + 10 b) r + b^2) \text{abs}(r)}))}{+ ((3 - b) \text{abs}(b) - 2 \text{abs}(b) d) k r - b \text{abs}(b) k) \text{abs}(r)} \\ & + \sqrt{2} b r \sqrt{((- ((2 d - b - 1) k^2 r - b k^2) \sqrt{((- 4 d) + b^2 + 2 b + 9) r^2 + ((- 4 b d) + 2 b^2 + 10 b) r + b^2})} \\ & - ((- 2 d^2) + (2 b + 4) d - b^2 - 2 b + 3) k^2 r - (4 b d - 2 b^2 - 6 b) k r + b^2 k^2) \\ & / (4 b \text{abs}(b) r \text{abs}(r)) \end{aligned}$$

$$\begin{aligned} y = & (\sqrt{((- 2 d) + b + 1) k^2 r + b k^2} \sqrt{((- 4 d) + b^2 + 2 b + 9) r^2 + ((- 4 b d) + 2 b^2 + 10 b) r + b^2}) \\ & + ((- 4 b d) + 2 b^2 + 10 b) r + b^2 + (2 d^2 + ((- 2 b) - 4) d + b^2 + 2 b - 3) k^2 r \\ & + ((- 4 b d) + 2 b^2 + 6 b) k^2 r + b^2 k^2) (\sqrt{((- 4 d) + b^2 + 2 b + 9) r^2 + ((- 4 b d) + 2 b^2 + 10 b) r + b^2}) \\ & (((- 3 \sqrt{2} b^3 \text{abs}(b) d) + (3 \sqrt{2} b^2 + 3^2 b) \text{abs}(b) d + ((- \sqrt{2} b) - 3 \sqrt{2} b) \text{abs}(b)) r^{3/2} \\ & + (3^2 b \text{abs}(b) d + ((- 3 \sqrt{2} b) - 3^2 b) \text{abs}(b)) r^2 - 2 b \text{abs}(b) r) \text{abs}(r) \end{aligned}$$

$$\begin{aligned}
& + r \left((3 \sqrt{2}) b \operatorname{abs}(b) d + b \left((-3 \sqrt{2}) b \right) - 3^2 b \operatorname{abs}(b) \right. \\
& d^2 + b^2 \left(\sqrt{2} b^3 + 3 \sqrt{2} b^2 + 2^{5/2} b \operatorname{abs}(b) \right) r^{3/2} \\
& + (b^5 (3 \sqrt{2}) b^3 + 3^2 b^3) \operatorname{abs}(b) - 3^2 b^3 \operatorname{abs}(b) d \left. \right) r + 2^5 b^5 \operatorname{abs}(b) \operatorname{abs}(r) \\
& + \left((-2^{3/2} b^3 \operatorname{abs}(b) d) + (3 \sqrt{2}) b^4 + 11 \sqrt{2} b^3 \right) \operatorname{abs}(b) d^2 \\
& + \left((-3 \sqrt{2}) b^6 - 11 \sqrt{2} b^5 - 7^2 b^4 \right) \operatorname{abs}(b) d^3 \\
& + \left(\sqrt{2} b^4 + 2^5 b^2 + 7 \sqrt{2} b^5 \right) \operatorname{abs}(b) r^4 \\
& + \left(11 \sqrt{2} b^5 \operatorname{abs}(b) d + (-11 \sqrt{2}) b^6 - 2^{11/2} b^4 \right) \operatorname{abs}(b) d^5 \\
& + \left(2^{5/2} b^6 + 2^{9/2} b^5 + 7^2 b^4 \right) \operatorname{abs}(b) r^6 + \left((5 \sqrt{2}) b^6 + 2^{9/2} b^5 \right) \operatorname{abs}(b) \\
& - 5^2 b^3 \operatorname{abs}(b) d \left. \right) r^{3/2} + 2^{3/2} b^6 \operatorname{abs}(b) r^2 \operatorname{abs}(r) \\
& + r \left((2^2 b^3 \operatorname{abs}(b) d + b^2 \left((-3 \sqrt{2}) b \right) - 11 \sqrt{2} b \right) \operatorname{abs}(b) d^2 \\
& + b^2 (3 \sqrt{2}) b^4 + 11 \sqrt{2} b^5 + 11^2 b^2 \right) \operatorname{abs}(b) d^3 \\
& + b^2 \left((-\sqrt{2}) b^4 - 2^5 b^2 - 11 \sqrt{2} b^3 - 3^2 b \right) \operatorname{abs}(b) r^5 \\
& + \left((-11 \sqrt{2}) b^5 \operatorname{abs}(b) d + b^2 (11 \sqrt{2}) b^4 + 2^{11/2} b^2 \right) \operatorname{abs}(b) d^3 \\
& + b^2 \left((-2^{3/2} b^5) - 2^2 b^3 - 13^2 b^2 \right) \operatorname{abs}(b) r^6 \\
& + (5^2 b^5 \operatorname{abs}(b) d + b^2 \left((-5 \sqrt{2}) b \right) - 2^2 b \right) \operatorname{abs}(b) r^6 - 2^6 b^5 \operatorname{abs}(b) \operatorname{abs}(r) \\
& + (2 b^5 d + (-5 b^4) - 3 b^2) d^5 + (4 b^6 + 6 b^5 - 24 b^4) d^6 + ((-b^7) - 3 b^6 + 36 b^5 + 68 b^4) d^7 \\
& + ((-20 b^6) - 68 b^5 - 48 b^4) d^7 + 4 b^7 + 20 b^6 + 24 b^5) k r^2 \\
& + \sqrt{((-4 d) + b^2 + 2 b + 9) r^4 + ((-4 b d) + 2 b^2 + 10 b) r^5 + b^2} \\
& ((b^6 d - 2 b^5 d + (b^6 - 12 b^5) d + (12 b^6 + 16 b^5) d - 4 b^6 - 8 b^5) k r^2 \\
& + ((-4 b^5 d) + (4 b^6 + 16 b^5) d - 8 b^6 - 16 b^5) k r^3 + 2^2 \\
& + r \left(((-2 b^5 d) + b^6 (4 b^4 + 4 b^3) d + b^5 \left((-2 b^4) - 6 b^3 + 12 b^2 \right) \right. \\
& d^2
\end{aligned}$$

$$\begin{aligned}
& + b^2 \left(\frac{2b^4}{5} - \frac{12b^3}{2} - \frac{24b^2}{4} \right) d + b^2 \left(\frac{4b^4}{3} + \frac{12b^3}{2} + \frac{12b^2}{3} \right) k r^4 \\
& + (4b^2 d + b^2 ((-4b^4) - 24b^4) d + b^2 (12b^2 + 16b^2)) k r^2 + 4b^2 k r^6 \\
& + r^4 \left((b^4 d + ((-2b^4) - 4)b^4 d + b^4 (b^2 + 6b^2) d + b^4 (8 - 2b^2) d \right. \\
& \left. + ((-4b^5) - 4)b^4) k r^2 \right. \\
& + (8b^5 d + b^3 ((-4b^5) - 8b^5)) k r^3 - 4b^5 k) + ((-3b^5 d) + (6b^5 - 8b^5) d \\
& + ((-3b^7) + 12b^6 + 80b^5) d + ((-4b^7) - 80b^6 - 128b^5) d + 20b^6 + 64b^5 + 48b^4) k r^2 \\
& + r^2 \left(((-4b^2 d) + b^3 (10b^2 + 10b^2) d + b^3 ((-8b^2) - 20b^2 + 20b^2) d \right. \\
& \left. + b^2 (2b^5 + 12b^4 - 30b^3 - 92b^2) d + b^2 ((-2b^5) + 18b^4 + 92b^3 + 112b^2) d \right. \\
& \left. + b^2 ((-4b^2) - 24b^4 - 56b^3 - 36b^2)) k r^3 + (6b^4 d + b^4 (4b^2 - 12b^2) d \right. \\
& \left. + b^4 (6b^4 - 6b^3 - 96b^2) d + b^4 (2b^5 + 96b^4 + 176b^3) d + b^4 ((-24b^4) - 88b^3 - 100b^2) k \right. \\
& \left. + r^7 \left((-20b^2 d) + b^2 (20b^2 + 64b^2) d + b^2 ((-32b^2) - 60b^2)) k r^2 + 4b^2 k r^3 \right. \\
& \left. + (12b^6 d + ((-12b^7) - 48b^6) d + 24b^7 + 48b^6) k r^5 \right. \\
& \left. + r^3 \left((2b^2 d + ((-5b^2) - 7)b^2 d + b^2 (4b^2 + 14b^2 + 4) d + b^2 ((-b^2) - 9b^2 - 6b^2 + 8) d \right. \right. \\
& \left. \left. + b^4 (2b^3 + 2b^2 - 8b^2 - 16) d + b^4 (4b^2 + 8b^2 + 12)) k r^3 \right. \right. \\
& \left. \left. + ((-3b^3 d) + b^3 (6b^2 + 4b^2) d + b^3 ((-3b^3) - 6b^2 + 16b^2) d + b^3 (2b^2 - 16b^2 - 32b^2) d \right. \right. \\
& \left. \left. + b^4 (4b^3 + 16b^2 + 20b^2) k r^2 + (8b^6 d + b^4 ((-8b^6) - 16b^6) d + b^4 (8b^6 + 4b^6)) k r^2 \right. \right.
\end{aligned}$$

$$\begin{aligned}
& \frac{-4 b^7 k^7}{8 b^8 - 16 b^6} e^r \left((2 b^6 d^7 - 4 b^4 d^3 + (2 b^8 - 24 b^6) d + (24 b^7 + 32 b^6) d - \right. \\
& \left. + ((-8 b^7 d^2) + (8 b^8 + 32 b^7) d - 16 b^8 - 32 b^7) e^r \right. \\
& \left. + r ((-4 b^6 d^4) + 8 b^5 d^4 + b^4 (32 b^7 - 4 b^6) d + b^5 ((-32 b^6) - 32 b^5) d \right. \\
& \left. + b^6 (8 b^5 + 16 b^4 + 24 b^3) e^r + (16 b^7 d^2 + b^6 ((-16 b^7) - 32 b^5) d \right. \\
& \left. + b^5 (16 b^8 + 16 b^4) e^r \right. \\
& \left. - 8 b^6 e^r \right) + r ((2 b^8 d^2 - 4 b^7 d^3 + b^4 (2 b^8 - 8 b^7) d + 8 b^4 d + 8 b^6) e^r \\
& + ((-8 b^7 d^2) + 8 b^8 d + 16 b^7) e^r + 8 b^8 e)
\end{aligned}$$

Periodic point

$$\begin{aligned}
x &= \frac{((- \text{abs}(b) k \sqrt{((-4 d) + b^2 + 2 b + 9) r + ((-4 b d) + 2 b + 10 b) r + b}) \text{abs}(r))}{(2 \text{abs}(b) d + (b - 3) \text{abs}(b)) k r + b \text{abs}(b) k) \text{abs}(r)} \\
&+ \frac{\sqrt{2} b r \sqrt{((2 d - b - 1) k^2 r - b k) \sqrt{((-4 d) + b^2 + 2 b + 9) r}}}{(2 d + ((-2 b) - 4) d + b^2 + 2 b - 3) k^2 r} \\
&+ \frac{((-4 b d) + 2 b^2 + 6 b) k^2 r + b^2 k^2}{(4 b \text{abs}(b) r \text{abs}(r))} \\
y &= \frac{(\sqrt{((2 d - b - 1) k^2 r - b k) \sqrt{((-4 d) + b^2 + 2 b + 9) r + ((-4 b d) + 2 b + 10 b) r}}}{(2 d + ((-2 b) - 4) d + b^2 + 2 b - 3) k^2 r + ((-4 b d) + 2 b + 6 b) k^2 r + b^2 k^2)} \\
&\frac{(\sqrt{((-4 d) + b^2 + 2 b + 9) r + ((-4 b d) + 2 b + 10 b) r + b})}{3} \frac{((-3 \sqrt{2} b \text{abs}(b) d) + (3 \sqrt{2} b^4 + 3^2 b) \text{abs}(b) d)}{5} \\
&+ \frac{((- \sqrt{2} b) - 3 \sqrt{2} b) \text{abs}(b) r + (3^2 b \text{abs}(b) d)}{5} \frac{((-3 \sqrt{2} b) - 3^2 b) \text{abs}(b) r - 2 b \text{abs}(b) r)}{3} \text{abs}(r)
\end{aligned}$$

$$\begin{aligned}
& + r^2 ((3 \sqrt{2}) b^3 \text{abs}(b) d^2 + b^2 ((-3 \sqrt{2}) b^2) - 3^2 b^2) \text{abs}(b) d \\
& + b^2 (\sqrt{2}) b^3 + 3 \sqrt{2} b^2 + 2^{5/2} b^2 \text{abs}(b)) r^2 \\
& + (b^5 (3 \sqrt{2}) b^3 + 3^2 b^2) \text{abs}(b) - 3^2 b^2 \text{abs}(b) d) r + 2^3 b^5 \text{abs}(b) \text{abs}(r)) \\
& + ((2^{3/2} b^3 \text{abs}(b) d^3 + ((-3 \sqrt{2}) b^4) - 11 \sqrt{2} b^3) \text{abs}(b) d^5 \\
& + (3 \sqrt{2} b^6 + 11 \sqrt{2} b^5 + 7^2 b^4) \text{abs}(b) d^6 \\
& + ((- \sqrt{2}) b^4) - 2^{5/2} b^5 - 7 \sqrt{2} b^4) \text{abs}(b)) r^4 \\
& + ((-11 \sqrt{2} b^5 \text{abs}(b) d^5) + (11 \sqrt{2} b^4 + 2^{11/2} b^5) \text{abs}(b) d^6 \\
& + ((-2^{5/2} b^6) - 2^{9/2} b^5 - 7^2 b^4) \text{abs}(b)) r^4 + (5^2 b^3 \text{abs}(b) d^5 \\
& + ((-5 \sqrt{2}) b^3) - 2^{3/2} b^3) \text{abs}(b)) r^2 - 2^2 b^2 \text{abs}(b) r^2) \text{abs}(r) \\
& + r^2 (((-2^{3/2} b^3 \text{abs}(b) d^3) + b^2 (3 \sqrt{2}) b^3 + 11 \sqrt{2} b^2) \text{abs}(b) d^5 \\
& + b^2 ((-3 \sqrt{2}) b^4) - 11 \sqrt{2} b^3 - 11^2 b^2) \text{abs}(b) d^5 \\
& + b^2 (\sqrt{2}) b^4 + 2^{5/2} b^3 + 11 \sqrt{2} b^2 + 3^2 b^2) \text{abs}(b)) r^3 \\
& + (11 \sqrt{2} b^2 \text{abs}(b) d^4 + b^2 ((-11 \sqrt{2}) b^3) - 2^{11/2} b^2) \text{abs}(b) d^4 \\
& + b^2 (2^{9/2} b^3 + 2^{5/2} b^2 + 13^2 b^2) \text{abs}(b)) r^3 + (b^2 (5 \sqrt{2}) b^3 + 2^9 b^2) \text{abs}(b) \\
& - 5^2 b^4 \text{abs}(b) d^5) r^2 + 2^{3/2} b^6 \text{abs}(b) \text{abs}(r)) \\
& + (2^6 b^5 d^4 + ((-5 b^4) - 3 b^2) d^5 + (4 b^4 + 6 b^6 - 24 b^5) d^7 + ((-b^4) - 3 b^3 + 36 b^6 + 68 b^5) d^6 \\
& + ((-20 b^6) - 68 b^5 - 48 b^4) d^7 + 4 b^7 + 20 b^6 + 24 b^5) k r^2 \\
& + \sqrt{((-4 d^4) + b^5 + 2 b^3 + 9) r^4 + ((-4 b d^4) + 2 b^5 + 10 b^4) r^2 + b^6} \\
& + ((-b^6 d^4) + 2 b^5 d^4 + (12 b^6 - b^5) d^4 + ((-12 b^6) - 16 b^5) d^4 + 4 b^6 + 8 b^5) k r^2 \\
& + (4 b^5 d^2 + ((-4 b^6) - 16 b^5) d^4 + 8 b^6 + 16 b^5) k r^5 \\
& + r^2 ((2 b^4 d^4 + b^3 ((-4 b^3) - 4 b^2) d^4 + b^2 (2 b^4 + 6 b^3 - 12 b^2) d^4 \\
& + b^2 ((-2 b^4) + 12 b^3 + 24 b^2) d^4 + b^2 ((-4 b^4) - 12 b^3 - 12 b^2)) k r^4
\end{aligned}$$

$$\begin{aligned}
& + ((-4b^5d^2) + b^2(4b^4 + 24b^3)d + b^4((-12b^4) - 16b^3))kr - 4b^6kr) \\
& + r(((-b^4d^2) + b^4(2b^4 + 4)d + b^2((-b^3) - 6b^2)d + b^4(2b^4 - 8)d + b^4(4b^4 + 4))kr \\
& + (b^5(4b^3 + 8b) - 8b^5d)kr + 4b^6k)) + ((-3b^5d) + (6b^5 - 8b^5)d \\
& + ((-3b^5) + 12b^6 + 80b^5)d + ((-4b^7) - 80b^6 - 128b^5)d + 20b^6 + 64b^5 + 48b^4)kr \\
& + r(((-4b^2d^3) + b^2(10b^4 + 10b^3)d + b^4((-8b^4) - 20b^3 + 20b^2)d \\
& + b^2(2b^5 + 12b^4 - 30b^3 - 92b^2)d + b^5((-2b^5) + 18b^4 + 92b^3 + 112b^2)d \\
& + b^2((-4b^2) - 24b^5 - 56b^4 - 36b^3))kr + (6b^4d + b^4(4b^3 - 12b^2)d \\
& + b^5(6b^4 - 6b^3 - 96b^2)d + b^5(2b^5 + 96b^4 + 176b^3)d + b^5((-24b^4) - 88b^3 - 100b^2))k \\
& r + ((-20b^7d^2) + b^7(20b^6 + 64b^5)d + b^7((-32b^6) - 60b^5))kr + 4b^7kr) \\
& + (12b^6d^2 + ((-12b^7) - 48b^6)d + 24b^7 + 48b^6)kr \\
& + r((2b^2d^2 + ((-5b^2) - 7)b^2d + b^4(4b^2 + 14b + 4)d + b^3((-b^3) - 9b^2 - 6b + 8)d \\
& + b^4(2b^3 + 2b^2 - 8b - 16)d + b^4(4b^2 + 8b + 12))kr \\
& + ((-3b^3d^2) + b^3(6b^3 + 4b^2)d + b^6((-3b^3) - 6b^2 + 16b)d + b^4(2b^3 - 16b^2 - 32b)d \\
& + b^3(4b^3 + 16b^2 + 20b))kr + (8b^6d + b^6((-8b^6) - 16b^5)d + b^8(8b^7 + 4b^6))kr \\
& + ((-8b^7) - 16b^6)d + b^8(8b^7 + 4b^6))kr
\end{aligned}$$

$$\begin{aligned}
& -4 b^2 k)) / ((2 b^2 d - 4 b^2 d + (2 b^2 - 24 b^2) d + (24 b^2 + 32 b^2) d - \\
& 8 b^2 - 16 b^2) e^r \\
& + ((-8 b^2 d^2) + (8 b^2 + 32 b^2) d - 16 b^2 - 32 b^2) e^r \\
& + r^4 ((-4 b^2 d^2) + 8 b^2 d + b^2 (32 b^2 - 4 b^2) d + b^2 ((-32 b^2) - 32 \\
& b^2) d^2 \\
& + b^2 (8 b^2 + 16 b^2 + 24 b^2) e^r + (16 b^2 d^2 + b^2 ((-16 b^2) - 32 b^2) d \\
& + b^2 (16 b^2 + 16 b^2) e^r \\
& - 8 b^2 e^r) + r^6 ((2 b^2 d - 4 b^2 d + b^2 (2 b^2 - 8 b^2) d + 8 b^2 d + 8 \\
& b^2) e^r \\
& + ((-8 b^2 d^2) + 8 b^2 d + 16 b^2) e^r + 8 b^2 e))
\end{aligned}$$

Periodic point

$$\begin{aligned}
& x = - (abs(b) k \sqrt{((-4 d) + b^2 + 2 b^2 + 9) r^2 + ((-4 b^2 d) + 2 b^2 + 10 \\
& b^2) r + b^2}) abs(r) \\
& + (((3 - b) abs(b) - 2 abs(b) d) k^2 r^2 - b abs(b) k) abs(r) \\
& + \sqrt{2} b r \sqrt{((2 d - b - 1) k^2 r^2 - b k^2) \sqrt{((-4 d) + b^2 + 2 b^2 + 9) r^2}} \\
& + ((-4 b^2 d) + 2 b^2 + 10 b^2) r + b^2) + (2 d^2 + ((-2 b^2) - 4) d + b^2 + 2 b^2 - 3) k^2 r^2 \\
& + ((-4 b^2 d) + 2 b^2 + 6 b^2) k^2 r^2 + b^2 k^2)) / (4 b abs(b) r abs(r))
\end{aligned}$$

$$\begin{aligned}
& y = - (\sqrt{((2 d - b - 1) k^2 r^2 - b k^2) \sqrt{((-4 d) + b^2 + 2 b^2 + 9) r^2}} \\
& + ((-4 b^2 d) + 2 b^2 + 10 b^2) r + b^2) + (2 d^2 + ((-2 b^2) - 4) d + b^2 + 2 b^2 - 3) k^2 r^2 \\
& + ((-4 b^2 d) + 2 b^2 + 6 b^2) k^2 r^2 + b^2 k^2) (\sqrt{((-4 d) + b^2 + 2 b^2 + 9) r^2} \\
& + ((-4 b^2 d) + 2 b^2 + 10 b^2) r + b^2) (((-3 \sqrt{2} b^3 abs(b) d^2) \\
& + (3 \sqrt{2} b^3 + 3^2 b^2) abs(b) d + ((- \sqrt{2} b^3) - 3 \sqrt{2} b^3) \\
& abs(b)) r^5 \\
& + (3 \sqrt{2} b^3 + 3^2 b^2) abs(b) d + ((- \sqrt{2} b^3) - 3 \sqrt{2} b^3) \\
& abs(b)) r^5
\end{aligned}$$

$$\begin{aligned}
& + (3^2 b \operatorname{abs}(b) d + ((-3 \sqrt{2} b)^2 - 3^2 b) \operatorname{abs}(b)) r - 2 \\
& b \operatorname{abs}(b) r) \operatorname{abs}(r) \\
& + r ((3 \sqrt{2} b \operatorname{abs}(b) d + b^2 ((-3 \sqrt{2} b)^2 - 3^2 b) \operatorname{abs}(b) \\
& d \\
& + b^2 (\sqrt{2} b^3 + 3 \sqrt{2} b^2 + 2^{5/2} b) \operatorname{abs}(b)) r \\
& + (b (3 \sqrt{2} b + 3^2 b) \operatorname{abs}(b) - 3^2 b \operatorname{abs}(b) d) r + 2 b \\
& \operatorname{abs}(b)) \operatorname{abs}(r)) \\
& + ((2^{3/2} b \operatorname{abs}(b) d + ((-3 \sqrt{2} b)^4 - 11 \sqrt{2} b) \operatorname{abs}(b) d \\
& + (3 \sqrt{2} b + 11 \sqrt{2} b + 7^2 b) \operatorname{abs}(b) d \\
& + ((- \sqrt{2} b)^2 - 2 b - 7 \sqrt{2} b) \operatorname{abs}(b)) r \\
& + ((-11 \sqrt{2} b \operatorname{abs}(b) d) + (11 \sqrt{2} b + 2^{11/2} b) \operatorname{abs}(b) d \\
& + ((-2 b)^2 - 2 b - 7^2 b) \operatorname{abs}(b)) r + (5^2 b \operatorname{abs}(b) d \\
& + ((-5 \sqrt{2} b)^2 - 2 b) \operatorname{abs}(b)) r - 2 b \operatorname{abs}(b) r) \operatorname{abs}(r) \\
& + r (((-2 b \operatorname{abs}(b) d) + b (3 \sqrt{2} b + 11 \sqrt{2} b) \operatorname{abs}(b) d \\
& + b ((-3 \sqrt{2} b)^2 - 11 \sqrt{2} b - 11^2 b) \operatorname{abs}(b) d \\
& + b (\sqrt{2} b + 2 b + 11 \sqrt{2} b + 3^2 b) \operatorname{abs}(b)) r \\
& + (11 \sqrt{2} b \operatorname{abs}(b) d + b ((-11 \sqrt{2} b)^2 - 2 b) \operatorname{abs}(b) d \\
& + b (2 b + 2 b + 13^2 b) \operatorname{abs}(b)) r + (b (5 \sqrt{2} b + 2 \\
& - 5^2 b \operatorname{abs}(b) d) r + 2 b \operatorname{abs}(b)) \operatorname{abs}(r)) \\
& + ((-2 b d) + (5 b + 3 b) d + ((-4 b)^2 - 6 b + 24 b) d + (b + \\
& 3 b - 36 b - 68 b) d \\
& + (20 b + 68 b + 48 b) d - 4 b^7 - 20 b^6 - 24 b^5) k r \\
& + \sqrt{((-4 d) + b^2 + 2 b + 9) r + ((-4 b d) + 2 b^2 + 10 b) r + b^2} \\
& ((b d - 2 b d + (b - 12 b) d + (12 b + 16 b) d - 4 b - 8 b) k \\
& + ((-4 b d) + (4 b + 16 b) d - 8 b^6 - 16 b^5) k r \\
& + ((-4 b^2) + (4 b^4 + 16 b^2) d - 8 b^6 - 16 b^5) k r
\end{aligned}$$

$$\begin{aligned}
& + r \left((-2bd) + b(4b + 4b)d + b((-2b) - 6b + 12b) \right. \\
& d^2 + b \left(\frac{2b^2}{5} - \frac{12b^4}{2} - \frac{24b^3}{4} \right) d + b \left(\frac{4b^2}{3} + \frac{12b^4}{2} + \frac{12b^3}{4} \right) k r^3 + 4b^6 k r^2 \\
& + (4bd + b((-4b) - 24b)d + b(12b + 16b)) k r + 4b^2 k r^4 \\
& + r \left((b^4d + (-2b) - 4)b^4d + b(b^4 + 6b)d + b(8 - 2b)d \right. \\
& + ((-4b) - 4)b^5 k r^2 + ((-4b) - 4)b^6 k r^5 + (8bd + b((-4b) - 8b)) k r - 4b^3 k^5 + (3bd + (8b - 6b)d) \\
& + (3b^7 - 12b^6 - 80b^5)d + (4b^7 + 80b^6 + 128b^5)d - 20b^7 - 64b^6 - 48b^5 k r^2 + 4b^5 k r^3 \\
& + r \left((4bd + b((-10b) - 10b)d + b(8b + 20b - 20b)d \right. \\
& + b((-2b) - 12b + 30b + 92b)d + b(2b - 18b - 92b - 112b)d \\
& + b(4b^2 + 24b^5 + 56b^4 + 36b^3)) k r + ((-6bd) + b(12b - 4b)) d^2 + b((-6b) + 6b + 96b)d + b((-2b) - 96b - 176b)d + b(24b^4 + 88b^6 + 100b^2)) k r^2 + (20bd + b((-20b) - 64b)d + b(32b + 60b)) k r - 4b^4 k r^3 + ((-12bd) + (12b^6 + 48b^7)d - 24b^6 - 48b^5) k r^3 + r((-2bd) + b(5b + 7)d + b((-4b) - 14b - 4)d + b(b^4 + 9b^3 + 6b^2 - 8)d + b((-2b) - 2b + 8b + 16)d + b((-4b) - 8b - 12)) k r^3 + (3bd + b((-6b) - 4b)d + b(3b + 6b - 16b)d + b((-2b) + 16b + 32b)d + (3b^4 - 6b^3 - 4b^2 + 6b^2 - 4b^3 + 2b^4))
\end{aligned}$$

$$\begin{aligned}
& + b^7 ((-4b^6) - 16b^5 - 20b^4)) k r + ((-8b^8 d) + b^7 (8b^6 + 16b^5) \\
& d + b^7 ((-8b^6) - 4b^5)) k^8 \\
& r + 4b^7 k)) / ((2b^6 d - 4b^7 d + (2b^8 - 24b^7) d + (24b^7 + 32b^6) d \\
& - 8b^7 - 16b^6) e r \\
& + ((-8b^7 d) + (8b^8 + 32b^7) d - 16b^8 - 32b^7) e r^5 \\
& + r^4 ((-4b^6 d) + 8b^5 d + b^4 (32b^6 - 4b^5) d + b^5 ((-32b^6) - 32 \\
& b^5) d^2 \\
& + b^6 (8b^5 + 16b^4 + 24b^3)) e r^2 + (16b^7 d + b^6 ((-16b^7) - 32b^6) d \\
& + b^6 (16b^8 + 16b^7)) e r^6 \\
& - 8b^6 e r) + r^6 ((2b^7 d - 4b^8 d + b^7 (2b^8 - 8b^7) d + 8b^8 d + 8 \\
& b^8) e r \\
& + ((-8b^7 d) + 8b^8 d + 16b^7) e r + 8b^8 e))
\end{aligned}$$

Periodic point

$$\begin{aligned}
& x = (abs(b) k \sqrt{((-4d) + b^2 + 2b + 9) r^2 + ((-4b d) + 2b^2 + 10 \\
& b) r + b^2) abs(r) \\
& + ((2 abs(b) d + (b - 3) abs(b)) k r + b abs(b) k) abs(r) \\
& + \sqrt{2} b r \sqrt{((- (2d - b - 1) k^2 r - b k^2) \\
& \sqrt{((-4d) + b^2 + 2b + 9) r^2 + ((-4b d) + 2b^2 + 10b) r + b^2))} \\
& - ((-2d) + (2b + 4) d - b^2 - 2b + 3) k^2 r - (4b d - 2b^2 - 6b) k \\
& r + b^2 k)) \\
& / (4b abs(b) r abs(r))
\end{aligned}$$

$$\begin{aligned}
& y = - (\sqrt{((-2d) + b + 1) k^2 r + b k^2} \sqrt{((-4d) + b^2 + 2b + 9) \\
& r^2 + ((-4b d) + 2b^2 + 10b) r + b^2} + (2d + ((-2b) - 4) d + b^2 + 2b \\
& - 3) k^2 r \\
& + ((-4b d) + 2b^2 + 6b) k^2 r + b^3 k^2) (\sqrt{((-4d) + b^2 + 2b + 9) \\
& r^2 + ((-4b d) + 2b^2 + 10b) r + b^2} (((-3 \sqrt{2} b^3 abs(b) d)
\end{aligned}$$

$$\begin{aligned}
& + (3 \sqrt{2} b^4 + 3^{\frac{3}{2}} b^3) \text{abs}(b) d + ((- \sqrt{2} b^5) - 3 \sqrt{2} b^4) \text{abs}(b) r \\
& + (3^{\frac{3}{2}} b^4 \text{abs}(b) d + ((- 3 \sqrt{2} b^5) - 3^{\frac{3}{2}} b^4) \text{abs}(b)) r - 2 \\
& b^2 \text{abs}(b) r \text{abs}(r) \\
& + r^2 ((3 \sqrt{2} b^3 \text{abs}(b) d + b^2 ((- 3 \sqrt{2} b^3) - 3^{\frac{3}{2}} b^2) \text{abs}(b) d \\
& + b^2 (\sqrt{2} b^3 + 3 \sqrt{2} b^{\frac{5}{2}} + 2 b^2) \text{abs}(b)) r \\
& + (b^5 (3 \sqrt{2} b^3 + 3^{\frac{3}{2}} b^2) \text{abs}(b) - 3^{\frac{3}{2}} b^2 \text{abs}(b) d) r + 2 b^5 \text{abs}(b) \text{abs}(r) \\
& + (((- 2^{\frac{3}{2}} b^3 \text{abs}(b) d) + (3 \sqrt{2} b^4 + 11 \sqrt{2} b^3) \text{abs}(b) d \\
& + ((- 3 \sqrt{2} b^5) - 11 \sqrt{2} b^4 - 7^{\frac{3}{2}} b^3) \text{abs}(b) d \\
& + (\sqrt{2} b^6 + 2^{\frac{5}{2}} b^5 + 7 \sqrt{2} b^4) \text{abs}(b)) r \\
& + (11 \sqrt{2} b^5 \text{abs}(b) d + ((- 11 \sqrt{2} b^5) - 2^{\frac{11}{2}} b^4) \text{abs}(b) d \\
& + (2^{\frac{5}{2}} b^6 + 2^{\frac{9}{2}} b^5 + 7^{\frac{3}{2}} b^4) \text{abs}(b)) r + ((5 \sqrt{2} b^6 + 2^{\frac{9}{2}} b^5) \text{abs}(b) \\
& - 5^{\frac{3}{2}} b^5 \text{abs}(b) d) r + 2^{\frac{3}{2}} b^6 \text{abs}(b) r \text{abs}(r) \\
& + r^2 ((2^{\frac{3}{2}} b^3 \text{abs}(b) d + b^2 ((- 3 \sqrt{2} b^3) - 11 \sqrt{2} b^2) \text{abs}(b) d \\
& + b^2 (3 \sqrt{2} b^4 + 11 \sqrt{2} b^{\frac{5}{2}} + 11^{\frac{3}{2}} b^2) \text{abs}(b) d \\
& + b^2 ((- \sqrt{2} b^4) - 2^{\frac{5}{2}} b^3 - 11 \sqrt{2} b^2 - 3^{\frac{3}{2}} b^{\frac{11}{2}}) \text{abs}(b)) r \\
& + ((- 11 \sqrt{2} b^5 \text{abs}(b) d) + b^2 (11 \sqrt{2} b^5 + 2^{\frac{11}{2}} b^4) \text{abs}(b) d \\
& + b^2 ((- 2^{\frac{5}{2}} b^4) - 2^{\frac{9}{2}} b^3 - 13^{\frac{3}{2}} b^2) \text{abs}(b)) r \\
& + (5^{\frac{3}{2}} b^5 \text{abs}(b) d + b^4 ((- 5 \sqrt{2} b^5) - 2^{\frac{5}{2}} b^4) \text{abs}(b)) r - 2 \\
& b^6 \text{abs}(b) \text{abs}(r) \\
& + ((- 2^{\frac{5}{2}} b^4 d) + (5 b^5 + 3 b^4) d + ((- 4 b^6) - 6 b^5 + 24 b^4) d + (b^6 + 3 b^5 - 36 b^4 - 68 b^3) d \\
& + (20 b^6 + 68 b^5 + 48 b^4) d - 4 b^7 - 20 b^6 - 24 b^5) k r \\
& + \sqrt{((- 4 d) + b^2 + 2 b + 9) r + ((- 4 b d) + 2 b^2 + 10 b) r + b^2}
\end{aligned}$$

$$\begin{aligned}
& 5 \quad 4 \quad 4 \quad 5 \quad 3 \quad 4 \quad 6 \quad 2 \quad 5 \quad 4 \quad 6 \\
& ((-b^4 d^4) + 2b^5 d^3 + (12b^4 - b^6) d^2 + ((-12b^5) - 16b^4) d + 4b^6 + 8b^5) k r \\
& + (4b^5 d^2 + ((-4b^6) - 16b^5) d + 8b^6 + 16b^5) k r \\
& + r^2 ((2b^4 d^4 + b^3 ((-4b^2) - 4b^3) d^2 + b^4 (2b^3 + 6b^2 - 12b^2) d^2 \\
& + b^5 ((-2b^2) + 12b^3 + 24b^4) d^2 + b^6 ((-4b^2) - 12b^3 - 12b^2)) k r \\
& + ((-4b^6 d^2) + b^4 (4b^4 + 24b^3) d + b^6 ((-12b^4) - 16b^3)) k r - 4b^4 k r) \\
& + r^4 (((-b^4 d^4) + b^2 (2b^4 + 4) d^2 + b^3 ((-b^3) - 6b^2) d^2 + b^4 (2b^2 - 8) d + b^5 (4b^4 + 4)) k r \\
& + (b^7 (4b^6 + 8b^5) - 8b^6 d) k r + 4b^7 k)) + (3b^5 d^4 + (8b^5 - 6b^6) d^3 \\
& + (3b^6 - 12b^4 - 80b^5) d^2 + (4b^3 + 80b^2 + 128b^4) d - 20b^3 - 64b^2 - 48b^5) k r \\
& + r^3 ((4b^2 d^5 + b^4 ((-10b^3) - 10b^2) d^2 + b^5 (8b^4 + 20b^3 - 20b^2) d^2 \\
& + b^6 ((-2b^5) - 12b^4 + 30b^3 + 92b^2) d + b^7 (2b^5 - 18b^4 - 92b^3 - 112b^2) d \\
& + b^3 (4b^2 + 24b^4 + 56b^3 + 36b^2)) k r + ((-6b^5 d^4) + b^3 (12b^5 - 4b^4) d^3 \\
& + b^5 ((-6b^4) + 6b^3 + 96b^2) d + b^6 ((-2b^5) - 96b^4 - 176b^3) d + b^7 (24b^4 + 88b^3 + 100b^2)) \\
& k r + (20b^7 d^2 + b^5 ((-20b^4) - 64b^3) d + b^6 (32b^5 + 60b^4)) k r - 4b^4 k r) \\
& + ((-12b^6 d^2) + (12b^7 + 48b^6) d - 24b^7 - 48b^6) k r \\
& + r^3 ((-2b^2 d^2) + b^2 (5b^3 + 7) d + b^4 ((-4b^2) - 14b^2 - 4) d + b^4 (b^4 + 9b^3 + 6b^2 - 8) d \\
& + b^5 ((-2b^3) - 2b^2 + 8b^2 + 16) d + b^6 ((-4b^2) - 8b^2 - 12)) k r \\
& + ((-12b^6 d^2) + (12b^7 + 48b^6) d - 24b^7 - 48b^6) k r
\end{aligned}$$

$$\begin{aligned}
& + (3b^4d + b^3((-6b^2) - 4b)d + b^2(3b^6 + 6b^4 - 16b^3)d + b^2 \\
& ((-2b^4) + 16b^3 + 32b^2)d \\
& + b^4((-4b^3) - 16b^2 - 20b))kr + ((-8b^6d) + b^4(8b^6 + 16b^7) \\
& d + b^7((-8b^6) - 4b^4))k \\
& r + 4b^7k)) / ((2b^8d - 4b^7d + (2b^8 - 24b^7)d + (24b^6 + 32b^5)d \\
& - 8b^7 - 16b^6)e r \\
& + ((-8b^7d) + (8b^8 + 32b^7)d - 16b^8 - 32b^7)e r \\
& + r^4(((- 4b^6d) + 8b^5d + b^4(32b^7 - 4b^4)d + b^6((-32b^6) - 32 \\
& b^5)d \\
& + b^2(8b^6 + 16b^5 + 24b^3))e r + (16b^7d + b^6((-16b^7) - 32b^5)d \\
& + b^8(16b^2 + 16b^4))e r \\
& - 8b^6e r) + r^6((2b^8d - 4b^7d + b^4(2b^8 - 8b^4)d + 8b^7d + 8 \\
& b^6)e r \\
& + ((-8b^7d) + 8b^8d + 16b^7)e r + 8b^8e))
\end{aligned}$$