- 1×1

$$4p_i^2 + 4r_i^2 + 2$$

- 2×2

$$16p_i^2 x_i^2 - 32p_i q_i r_i x_i + 16q_i^2 r_i^2 + 8p_i^2 + 8q_i^2 + 8r_i^2 + 8x_i^2 + 4$$

- 3×3

$$8p_i^2 + 8q_i^2 + 4$$

- 4×4

$$8p_i^2 r_i^2 + 4p_i^2 x_i^2 + 8p_i q_i r_i x_i + 4q_i^2 r_i^2 + 8q_i^2 x_i^2 - 8p_i r_i v_i - 8q_i v_i x_i + 2r_i^2 + 4v_i^2 + 2x_i^2$$

- 5×5

$$4p_i^2 r_i^2 + 4q_i^2 r_i^2 - 4p_i r_i v_i + r_i^2 + 2v_i^2$$

- 6×6

$$16p_1^2 p_i^2 r_i^2 + 16p_1^2 q_i^2 r_i^2 + 16p_i^2 r^2 r_i^2 + 16q_i^2 r^2 r_i^2 - 16p_1^2 p_i r_i v_i - 16p_i r^2 r_i v_i + 4p_1^2 r_i^2$$
$$+ 8p_1^2 v_i^2 + 4p_i^2 r_i^2 + 4r^2 r_i^2 + 8r^2 v_i^2 - 4p_i r_i v_i + v_i^2$$

- 7×7

$$64p_1^2 p_i^2 r_i^2 x^2 + 64p_1^2 q_i^2 r_i^2 x^2 - 128p_1 p_i^2 q_1 r r_i^2 x - 128p_1 q_1 q_i^2 r r_i^2 x + 64p_i^2 q_1^2 r^2 r_i^2 + 64q_1^2 q_i^2 r^2 r_i^2 - 64p_1^2 p_i r_i v_i x^2$$
$$+ 128p_1 p_i q_1 r r_i v_i x - 64p_i q_1^2 r^2 r_i v_i + 16p_1^2 q_i^2 r_i^2 + 16p_1^2 r_i^2 x^2 + 32p_1^2 v_i^2 x^2 - 32p_1 p_i q_1 q_i r_i^2 - 32p_1 q_1 r r_i^2 x$$
$$- 64p_1 q_1 r v_i^2 x + 16p_i^2 q_1^2 r_i^2 + 16p_i^2 r_i^2 x^2 - 32p_i q_i r r_i^2 x + 16q_1^2 r^2 r_i^2 + 32q_1^2 r^2 v_i^2 + 16q_i^2 r^2 r_i^2 + 16p_1 q_1 q_i r_i v_i$$
$$- 16p_i q_1^2 r_i v_i - 16p_i r_i v_i x^2 + 16q_i r r_i v_i x + 4q_1^2 v_i^2 + 4v_i^2 x^2$$

- 8×8

$$128p_1^2 p_i^2 r_i^2 x^2 + 128p_1^2 q_i^2 r_i^2 x^2 - 256p_1 p_i^2 q_1 r r_i^2 x - 256p_1 q_1 q_i^2 r r_i^2 x + 128p_i^2 q_1^2 r^2 r_i^2 + 128q_1^2 q_i^2 r^2 r_i^2$$
$$- 128p_1^2 p_i r_i v_i x^2 + 256p_1 p_i q_1 r r_i v_i x - 128p_i q_1^2 r^2 r_i v_i + 48p_1^2 q_i^2 r_i^2 + 32p_1^2 r_i^2 x^2 + 64p_1^2 v_i^2 x^2 - 96p_1 p_i q_1 q_i r_i^2$$
$$- 64p_1 q_1 r_i^2 xr - 128p_1 q_1 r v_i^2 x + 48p_i^2 q_1^2 r_i^2 + 32p_i^2 r_i^2 x^2 - 64p_i q_i r r_i^2 x + 32q_1^2 r^2 r_i^2 + 64q_1^2 r^2 v_i^2 + 32q_i^2 r^2 r_i^2$$
$$df + 48p_1 q_1 q_i r_i v_i - 48p_i q_1^2 r_i v_i - 32p_i r_i v_i x^2 + 32q_i r r_i v_i x + 12q_1^2 v_i^2 + 8v_i^2 x^2$$

- 9×9

$$128p_1^2 p_i^2 r^2 r_i^2 x^2 - 128p_1^2 p_i q_i r^3 r_i^2 x + 128p_1^2 p_i q_i r r_i^2 x^3 + 32p_1^2 q_i^2 r^4 r_i^2 - 64p_1^2 q_i^2 r^2 r_i^2 x^2 + 32p_1^2 q_i^2 r_i^2 x^4$$
$$- 128p_1 p_i^2 q_1 r^3 r_i^2 x + 128p_1 p_i^2 q_1 r r_i^2 x^3 + 64p_1 p_i q_1 q_i r^4 r_i^2 - 384p_1 p_i q_1 q_i r^2 r_i^2 x^2 + 64p_1 p_i q_1 q_i r_i^2 x^4$$
$$+ 128p_1 q_1 q_i^2 r^3 r_i^2 x - 128p_1 q_1 q_i^2 r r_i^2 x^3 + 32p_i^2 q_1^2 r^4 r_i^2 - 64p_i^2 q_1^2 r^2 r_i^2 x^2 + 32p_i^2 q_1^2 r_i^2 x^4 + 128p_i q_1^2 q_i r^3 r_i^2 x$$
$$- 128p_i q_1^2 q_i r r_i^2 x^3 + 128q_1^2 q_i^2 r^2 r_i^2 x^2 - 128p_1^2 p_i r^2 r_i v_i x^2 + 64p_1^2 q_i r^3 r_i v_i x - 64p_1^2 q_i r r_i v_i x^3 - 128p_1 p_i^2 r r_i^2 v x^2$$
$$+ 128p_1 p_i q_1 r^3 r_i v_i x - 128p_1 p_i q_1 r r_i v_i x^3 + 192p_1 p_i q_i r^2 r_i^2 v x - 64p_1 p_i q_i r_i^2 v x^3 - 32p_1 q_1 q_i r^4 r_i v_i$$
$$+ 192p_1 q_1 q_i r^2 r_i v_i x^2 - 32p_1 q_1 q_i r_i v_i x^4 - 64p_1 q_i^2 r^3 r_i^2 v + 64p_1 q_i^2 r r_i^2 v x^2 + 64p_i^2 q_1 r^2 r_i^2 v x - 64p_i^2 q_1 r_i^2 v x^3$$
$$- 32p_i q_1^2 r^4 r_i v_i + 64p_i q_1^2 r^2 r_i v_i x^2 - 32p_i q_1^2 r_i v_i x^4 - 64p_i q_1 q_i r^3 r_i^2 v + 192p_i q_1 q_i r r_i^2 v x^2 - 64q_1^2 q_i r^3 r_i v_i x$$
$$+ 64q_1^2 q_i r r_i v_i x^3 - 128q_1 q_i^2 r^2 r_i^2 v x + 32p_i^2 r^2 v_i^2 x^2 + 128p_1 p_i r r_i v v_i x^2 - 32p_1 q_1 r^3 v_i^2 x + 32p_1 q_1 r v_i^2 x^3$$
$$- 96p_1 q_i r^2 r_i v v_i x + 32p_1 q_i r_i v v_i x^3 + 32p_i^2 r_i^2 v^2 x^2 - 64p_i q_1 r^2 r_i v v_i x + 64p_i q_1 r_i v v_i x^3 - 64p_i q_i r r_i^2 v^2 x$$
$$+ 8q_1^2 r^4 v_i^2 - 16q_1^2 r^2 v_i^2 x^2 + 8q_1^2 v_i^2 x^4 + 32q_1 q_i r^3 r_i v v_i - 96q_1 q_i r r_i v v_i x^2 + 32q_i^2 r^2 r_i^2 v^2 - 32p_1 r v v_i^2 x^2$$
$$- 32p_i r_i v^2 v_i x^2 + 16q_1 r^2 v v_i^2 x - 16q_1 v v_i^2 x^3 + 32q_i r r_i v^2 v_i x + 8v^2 v_i^2 x^2$$

- 10×10

$$\frac{4}{c^4}(64c^3d_1p_1^2p_i^2r^2r_i^2x^2 + 64c^3d_1p_1^2q_i^2r^2r_i^2x^2 - 64c^3d_1p_1p_i^2q_1r^3r_i^2x + 64c^3d_1p_1p_i^2q_1rr_i^2x^3$$

$$- 64c^3d_1p_1q_1q_i^2r^3r_i^2x + 64c^3d_1p_1q_1q_i^2rr_i^2x^3 + 16c^3d_1p_i^2q_1^2r^4r_i^2 - 32c^3d_1p_i^2q_1^2r^2r_i^2x^2 + 16c^3d_1p_i^2q_1^2r_i^2x^4$$

$$+ 16c^3d_1q_1^2q_i^2r^4r_i^2 - 32c^3d_1q_1^2q_i^2r^2r_i^2x^2 + 16c^3d_1q_1^2q_i^2r_i^2x^4 + 16c^3d_2p_1^2q_i^2r^4r_i^2 + 32c^3d_2p_1^2q_i^2r^2r_i^2x^2$$

$$+ 16c^3d_2p_1^2q_i^2r_i^2x^4 + 16c^3d_2q_1^2q_i^2r^4r_i^2 + 32c^3d_2q_1^2q_i^2r^2r_i^2x^2 + 16c^3d_2q_1^2q_i^2r_i^2x^4 + 32c^2d_1d_2p_1^2p_i^2r^4r_i^2$$

$$+ 64c^2d_1d_2p_1^2p_i^2r^2r_i^2x^2 + 32c^2d_1d_2p_1^2p_i^2r_i^2x^4 + 32c^2d_1d_2p_1^2q_i^2r^4r_i^2 + 64c^2d_1d_2p_1^2q_i^2r^2r_i^2x^2$$

$$+ 32c^2d_1d_2p_1^2q_i^2r_i^2x^4 + 32c^2d_1d_2p_i^2q_1^2r^4r_i^2 + 64c^2d_1d_2p_i^2q_1^2r^2r_i^2x^2 + 32c^2d_1d_2p_i^2q_1^2r_i^2x^4$$

$$+ 32c^2d_1d_2q_1^2q_i^2r^4r_i^2 + 64c^2d_1d_2q_1^2q_i^2r^2r_i^2x^2 + 32c^2d_1d_2q_1^2q_i^2r_i^2x^4 - 64c^3d_1p_1^2p_ir^2r_iv_ix^2$$

$$- 64c^3d_1p_1p_i^2rr_i^2vx^2 + 64c^3d_1p_1p_iq_1r^3r_iv_ix - 64c^3d_1p_1p_iq_1rr_iv_ix^3 - 64c^3d_1p_1q_i^2rr_i^2vx^2$$

$$+ 32c^3d_1p_i^2q_1r^2r_i^2vx - 32c^3d_1p_i^2q_1r_i^2vx^3 - 16c^3d_1p_iq_1^2r^4r_iv_i + 32c^3d_1p_iq_1^2r^2r_iv_ix^2 - 16c^3d_1p_iq_1^2r_iv_ix^4$$

$$+ 32c^3d_1q_1q_i^2r^2r_i^2vx - 32c^3d_1q_1q_i^2r_i^2vx^3 - 32c^3d_2p_1q_i^2r^3r_i^2v - 32c^3d_2p_1q_i^2rr_i^2vx^2 - 32c^3d_2q_1q_i^2r^2r_i^2vx$$

$$- 32c^3d_2q_1q_i^2r_i^2vx^3 - 32c^2d_1d_2p_1^2p_ir^4r_iv_i - 64c^2d_1d_2p_1^2p_ir^2r_iv_ix^2 - 32c^2d_1d_2p_1^2p_ir_iv_ix^4$$

$$- 64c^2d_1d_2p_1p_i^2r^3r_i^2v - 64c^2d_1d_2p_1p_i^2rr_i^2vx^2 - 64c^2d_1d_2p_1q_i^2r^3r_i^2v - 64c^2d_1d_2p_1q_i^2rr_i^2vx^2$$

$$- 64c^2d_1d_2p_i^2q_1r^2r_i^2vx - 64c^2d_1d_2p_i^2q_1r_i^2vx^3 - 32c^2d_1d_2p_iq_1^2r^4r_iv_i - 64c^2d_1d_2p_iq_1^2r^2r_iv_ix^2$$

$$- 32c^2d_1d_2p_iq_1^2r_iv_ix^4 - 64c^2d_1d_2q_1q_i^2r^2r_i^2vx - 64c^2d_1d_2q_1q_i^2r_i^2vx^3 + 16c^3d_1p_1^2r^2v_i^2x^2$$

$$+ 64c^3d_1p_1p_irr_ivv_ix^2 - 16c^3d_1p_1q_1r^3v_i^2x + 16c^3d_1p_1q_1rv_i^2x^3 + 16c^3d_1p_i^2r_i^2v^2x^2$$

$$- 32c^3d_1p_iq_1r^2r_ivv_ix + 32c^3d_1p_iq_1r_ivv_ix^3 + 4c^3d_1q_1^2r^4v_i^2 - 8c^3d_1q_1^2r^2v_i^2x^2 + 4c^3d_1q_1^2v_i^2x^4$$

$$+ 16c^3d_1q_i^2r_i^2v^2x^2 + 16c^3d_2q_i^2r^2r_i^2v^2 + 16c^3d_2q_i^2r_i^2v^2x^2 + 32c^2d_1^2p_1^2r^2r_i^2x^2 + 32c^2d_1^2p_1^2r^2v_i^2x^2$$

$$- 32c^2d_1^2p_1q_1r^3r_i^2x - 32c^2d_1^2p_1q_1r^3v_i^2x + 32c^2d_1^2p_1q_1rr_i^2x^3 + 32c^2d_1^2p_1q_1rv_i^2x^3 + 8c^2d_1^2q_1^2r^4r_i^2$$

$$+ 8c^2d_1^2q_1^2r^4v_i^2 - 16c^2d_1^2q_1^2r^2r_i^2x^2 - 16c^2d_1^2q_1^2r^2v_i^2x^2 + 8c^2d_1^2q_1^2r_i^2x^4 + 8c^2d_1^2q_1^2v_i^2x^4 + 48c^2d_1d_2p_1^2p_i^2r^2r_i^2$$

$$+ 48c^2d_1d_2p_1^2q_i^2r^2r_i^2 + 8c^2d_1d_2p_1^2r^4r_i^2 + 16c^2d_1d_2p_1^2r^4v_i^2 + 16c^2d_1d_2p_1^2r^2r_i^2x^2 + 32c^2d_1d_2p_1^2r^2v_i^2x^2$$

$$+ 8c^2d_1d_2p_1^2r_i^2x^4 + 16c^2d_1d_2p_1^2v_i^2x^4 + 64c^2d_1d_2p_1p_ir^3r_ivv_i + 64c^2d_1d_2p_1p_irr_ivv_ix^2$$

$$+ 48c^2d_1d_2p_i^2q_1^2r^2r_i^2 + 8c^2d_1d_2p_i^2r^4r_i^2 + 32c^2d_1d_2p_i^2r^2r_i^2v^2 + 16c^2d_1d_2p_i^2r^2r_i^2x^2 + 32c^2d_1d_2p_i^2r_i^2v^2x^2$$

$$+ 8c^2d_1d_2p_i^2r_i^2x^4 + 64c^2d_1d_2p_iq_1r^2r_ivv_ix + 64c^2d_1d_2p_iq_1r_ivv_ix^3 + 48c^2d_1d_2q_1^2q_i^2r^2r_i^2 + 8c^2d_1d_2q_1^2r^4r_i^2$$

$$+ 16c^2d_1d_2q_1^2r^4v_i^2 + 16c^2d_1d_2q_1^2r^2r_i^2x^2 + 32c^2d_1d_2q_1^2r^2v_i^2x^2 + 8c^2d_1d_2q_1^2r_i^2x^4 + 16c^2d_1d_2q_1^2v_i^2x^4$$

$$+ 8c^2d_1d_2q_i^2r^4r_i^2 + 32c^2d_1d_2q_i^2r^2r_i^2v^2 + 16c^2d_1d_2q_i^2r^2r_i^2x^2 + 32c^2d_1d_2q_i^2r_i^2v^2x^2 + 8c^2d_1d_2q_i^2r_i^2x^4$$

$$+ 8c^2d_2^2q_i^2r^4r_i^2 + 16c^2d_2^2q_i^2r^2r_i^2x^2 + 8c^2d_2^2q_i^2r_i^2x^4 + 16cd_1^2d_2p_1^2r^4r_i^2 + 16cd_1^2d_2p_1^2r^4v_i^2 + 32cd_1^2d_2p_1^2r^2r_i^2x^2$$

$$+ 32cd_1^2d_2p_1^2r^2v_i^2x^2 + 16cd_1^2d_2p_1^2r_i^2x^4 + 16cd_1^2d_2p_1^2v_i^2x^4 + 16cd_1^2d_2q_1^2r^4r_i^2 + 16cd_1^2d_2q_1^2r^4v_i^2$$

$$+ 32cd_1^2d_2q_1^2r^2r_i^2x^2 + 32cd_1^2d_2q_1^2r^2v_i^2x^2 + 16cd_1^2d_2q_1^2r_i^2x^4 + 16cd_1^2d_2q_1^2v_i^2x^4 + 16cd_1d_2^2p_i^2r^4r_i^2$$

$$+ 32cd_1d_2^2p_i^2r^2r_i^2x^2 + 16cd_1d_2^2p_i^2r_i^2x^4 + 16cd_1d_2^2q_i^2r^4r_i^2 + 32cd_1d_2^2q_i^2r^2r_i^2x^2 + 16cd_1d_2^2q_i^2r_i^2x^4$$

$$- 16c^3d_1p_1rvv_i^2x^2 - 16c^3d_1p_ir_iv^2v_ix^2 + 8c^3d_1q_1r^2vv_i^2x - 8c^3d_1q_1vv_i^2x^3 - 32c^2d_1^2p_1rr_i^2vx^2$$

$$- 32c^2d_1^2p_1rvv_i^2x^2 + 16c^2d_1^2q_1r^2r_i^2vx + 16c^2d_1^2q_1r^2vv_i^2x - 16c^2d_1^2q_1r_i^2vx^3 - 16c^2d_1^2q_1vv_i^2x^3$$

$$- 48c^2d_1d_2p_1^2p_ir^2r_iv_i - 48c^2d_1d_2p_1p_i^2rr_i^2v - 48c^2d_1d_2p_1q_i^2rr_i^2v - 16c^2d_1d_2p_1r^3r_i^2v - 32c^2d_1d_2p_1r^3vv_i^2$$

$$- 16c^2d_1d_2p_1rr_i^2vx^2 - 32c^2d_1d_2p_1rvv_i^2x^2 - 48c^2d_1d_2p_iq_1^2r^2r_iv_i - 8c^2d_1d_2p_ir^4r_iv_i$$

$$- 32c^2d_1d_2p_ir^2r_iv^2v_i - 16c^2d_1d_2p_ir^2r_iv_ix^2 - 32c^2d_1d_2p_ir_iv^2v_ix^2 - 8c^2d_1d_2p_ir_iv_ix^4$$

$$- 16c^2d_1d_2q_1r^2r_i^2vx - 32c^2d_1d_2q_1r^2vv_i^2x - 16c^2d_1d_2q_1r_i^2vx^3 - 32c^2d_1d_2q_1vv_i^2x^3 - 32cd_1^2d_2p_1r^3r_i^2v$$

$$- 32cd_1^2d_2p_1r^3vv_i^2 - 32cd_1^2d_2p_1rr_i^2vx^2 - 32cd_1^2d_2p_1rvv_i^2x^2 - 32cd_1^2d_2q_1r^2r_i^2vx - 32cd_1^2d_2q_1r^2vv_i^2x$$

$$- 32cd_1^2d_2q_1r_i^2vx^3 - 32cd_1^2d_2q_1vv_i^2x^3 - 16cd_1d_2^2p_ir^4r_iv_i - 32cd_1d_2^2p_ir^2r_iv_ix^2 - 16cd_1d_2^2p_ir_iv_ix^4$$

$$+ 4c^3 d_1 v^2 v_i^2 x^2 + 8c^2 d_1^2 r_i^2 v^2 x^2 + 8c^2 d_1^2 v^2 v_i^2 x^2 + 12c^2 d_1 d_2 p_1^2 r^2 v_i^2 + 48c^2 d_1 d_2 p_1 p_i r r_i v v_i + 12c^2 d_1 d_2 p_i^2 r_i^2 v^2$$

$$+ 12c^2 d_1 d_2 q_1^2 r^2 v_i^2 + 12c^2 d_1 d_2 q_i^2 r_i^2 v^2 + 2c^2 d_1 d_2 r^4 v_i^2 + 8c^2 d_1 d_2 r^2 r_i^2 v^2 + 16c^2 d_1 d_2 r^2 v^2 v_i^2 + 4c^2 d_1 d_2 r^2 v_i^2 x^2$$

$$+ 8c^2 d_1 d_2 r_i^2 v^2 x^2 + 16c^2 d_1 d_2 v^2 v_i^2 x^2 + 2c^2 d_1 d_2 v_i^2 x^4 + 12c^2 d_2^2 q_i^2 r_i^2 v^2 + 24cd_1^2 d_2 p_1^2 r^2 r_i^2 + 24cd_1^2 d_2 p_1^2 r^2 v_i^2$$

$$+ 24cd_1^2 d_2 q_1^2 r^2 r_i^2 + 24cd_1^2 d_2 q_1^2 r^2 v_i^2 + 4cd_1^2 d_2 r^4 r_i^2 + 4cd_1^2 d_2 r^4 v_i^2 + 16cd_1^2 d_2 r^2 r_i^2 v^2 + 8cd_1^2 d_2 r^2 r_i^2 x^2$$

$$+ 16cd_1^2 d_2 r^2 v^2 v_i^2 + 8cd_1^2 d_2 r^2 v_i^2 x^2 + 16cd_1^2 d_2 r_i^2 v^2 x^2 + 4cd_1^2 d_2 r_i^2 x^4 + 16cd_1^2 d_2 v^2 v_i^2 x^2 + 4cd_1^2 d_2 v_i^2 x^4$$

$$+ 24cd_1 d_2^2 p_i^2 r^2 r_i^2 + 24cd_1 d_2^2 p_i^2 r_i^2 v^2 + 24cd_1 d_2^2 q_i^2 r^2 r_i^2 + 24cd_1 d_2^2 q_i^2 r_i^2 v^2 + 4cd_1 d_2^2 r^4 r_i^2 + 8cd_1 d_2^2 r^4 v_i^2$$

$$+ 8cd_1 d_2^2 r^2 r_i^2 x^2 + 16cd_1 d_2^2 r^2 v_i^2 x^2 + 4cd_1 d_2^2 r_i^2 x^4 + 8cd_1 d_2^2 v_i^2 x^4 + 8d_1^2 d_2^2 r^4 r_i^2 + 8d_1^2 d_2^2 r^4 v_i^2$$

$$+ 16d_1^2 d_2^2 r^2 r_i^2 x^2 + 16d_1^2 d_2^2 r^2 v_i^2 x^2 + 8d_1^2 d_2^2 r_i^2 x^4 + 8d_1^2 d_2^2 v_i^2 x^4 - 12c^2 d_1 d_2 p_1 r v v_i^2 - 12c^2 d_1 d_2 p_i r_i v^2 v_i$$

$$- 24cd_1^2 d_2 p_1 r r_i^2 v - 24cd_1^2 d_2 p_1 r v v_i^2 - 24cd_1 d_2^2 p_i r^2 r_i v_i - 24cd_1 d_2^2 p_i r_i v^2 v_i + 3c^2 d_1 d_2 v^2 v_i^2$$

$$+ 6cd_1^2 d_2 r_i^2 v^2 + 6cd_1^2 d_2 v^2 v_i^2 + 6cd_1 d_2^2 r^2 v_i^2 + 6cd_1 d_2^2 r_i^2 v^2 + 12cd_1 d_2^2 v^2 v_i^2 + 12d_1^2 d_2^2 r^2 r_i^2$$

$$+ 12d_1^2 d_2^2 r^2 v_i^2 + 12d_1^2 d_2^2 r_i^2 v^2 + 12d_1^2 d_2^2 v^2 v_i^2)$$

- 11×11

$$\frac{4}{c^5}(4p_2^2 c + 4r^2 c + c + 2d_3)(64c^3 d_1 p_1^2 p_i^2 r^2 r_i^2 x^2 + 64c^3 d_1 p_1^2 q_i^2 r^2 r_i^2 x^2 - 64c^3 d_1 p_1 p_i^2 q_1 r^3 r_i^2 x$$

$$+ 64c^3 d_1 p_1 p_i^2 q_1 r r_i^2 x^3 - 64c^3 d_1 p_1 q_1 q_i^2 r^3 r_i^2 x + 64c^3 d_1 p_1 q_1 q_i^2 r r_i^2 x^3 + 16c^3 d_1 p_i^2 q_1^2 r^4 r_i^2$$

$$- 32c^3 d_1 p_i^2 q_1^2 r^2 r_i^2 x^2 + 16c^3 d_1 p_i^2 q_1^2 r_i^2 x^4 + 16c^3 d_1 q_1^2 q_i^2 r^4 r_i^2 - 32c^3 d_1 q_1^2 q_i^2 r^2 r_i^2 x^2 + 16c^3 d_1 q_1^2 q_i^2 r_i^2 x^4$$

$$+ 16c^3 d_2 p_1^2 q_i^2 r^4 r_i^2 + 32c^3 d_2 p_1^2 q_i^2 r^2 r_i^2 x^2 + 16c^3 d_2 p_1^2 q_i^2 r_i^2 x^4 + 16c^3 d_2 q_1^2 q_i^2 r^4 r_i^2 + 32c^3 d_2 q_1^2 q_i^2 r^2 r_i^2 x^2$$

$$+ 16c^3 d_2 q_1^2 q_i^2 r_i^2 x^4 + 32c^2 d_1 d_2 p_1^2 p_i^2 r^4 r_i^2 + 64c^2 d_1 d_2 p_1^2 p_i^2 r^2 r_i^2 x^2 + 32c^2 d_1 d_2 p_1^2 p_i^2 r_i^2 x^4$$

$$+ 32c^2 d_1 d_2 p_1^2 q_i^2 r^4 r_i^2 + 64c^2 d_1 d_2 p_1^2 q_i^2 r^2 r_i^2 x^2 + 32c^2 d_1 d_2 p_1^2 q_i^2 r_i^2 x^4 + 32c^2 d_1 d_2 p_i^2 q_1^2 r^4 r_i^2$$

$$+ 64c^2 d_1 d_2 p_i^2 q_1^2 r^2 r_i^2 x^2 + 32c^2 d_1 d_2 p_i^2 q_1^2 r_i^2 x^4 + 32c^2 d_1 d_2 q_1^2 q_i^2 r^4 r_i^2 + 64c^2 d_1 d_2 q_1^2 q_i^2 r^2 r_i^2 x^2$$

$$+ 32c^2 d_1 d_2 q_1^2 q_i^2 r_i^2 x^4 - 64c^3 d_1 p_1^2 p_i r^2 r_i v_i x^2 - 64c^3 d_1 p_1 p_i^2 r r_i^2 v x^2 + 64c^3 d_1 p_1 p_i q_1 r^3 r_i v_i x$$

$$- 64c^3 d_1 p_1 p_i q_1 r r_i v_i x^3 - 64c^3 d_1 p_1 q_i^2 r r_i^2 v x^2 + 32c^3 d_1 p_i^2 q_1 r^2 r_i^2 v x - 32c^3 d_1 p_i^2 q_1 r_i^2 v x^3 - 16c^3 d_1 p_i q_1^2 r^4 r_i v_i$$

$$+ 32c^3 d_1 p_i q_1^2 r^2 r_i v_i x^2 - 16c^3 d_1 p_i q_1^2 r_i v_i x^4 + 32c^3 d_1 q_1 q_i^2 r^2 r_i^2 v x - 32c^3 d_1 q_1 q_i^2 r_i^2 v x^3 - 32c^3 d_2 p_1 q_i^2 r^3 r_i^2 v$$

$$- 32c^3 d_2 p_1 q_i^2 r r_i^2 v x^2 - 32c^3 d_2 q_1 q_i^2 r^2 r_i^2 v x - 32c^3 d_2 q_1 q_i^2 r_i^2 v x^3 - 32c^2 d_1 d_2 p_1^2 p_i r^4 r_i v_i$$

$$- 64c^2 d_1 d_2 p_1^2 p_i r^2 r_i v_i x^2 - 32c^2 d_1 d_2 p_1^2 p_i r_i v_i x^4 - 64c^2 d_1 d_2 p_1 p_i^2 r^3 r_i^2 v - 64c^2 d_1 d_2 p_1 p_i^2 r r_i^2 v x^2$$

$$- 64c^2 d_1 d_2 p_1 q_i^2 r^3 r_i^2 v - 64c^2 d_1 d_2 p_1 q_i^2 r r_i^2 v x^2 - 64c^2 d_1 d_2 p_i^2 q_1 r^2 r_i^2 v x - 64c^2 d_1 d_2 p_i^2 q_1 r_i^2 v x^3$$

$$- 32c^2 d_1 d_2 p_i q_1^2 r^4 r_i v_i - 64c^2 d_1 d_2 p_i q_1^2 r^2 r_i v_i x^2 - 32c^2 d_1 d_2 p_i q_1^2 r_i v_i x^4 - 64c^2 d_1 d_2 q_1 q_i^2 r^2 r_i^2 v x$$

$$- 64c^2 d_1 d_2 q_1 q_i^2 r_i^2 v x^3 + 16c^3 d_1 p_1^2 r^2 v_i^2 x^2 + 64c^3 d_1 p_1 p_i r r_i v v_i x^2 - 16c^3 d_1 p_1 q_1 r^3 v_i^2 x + 16c^3 d_1 p_1 q_1 r v_i^2 x^3$$

$$+ 16c^3 d_1 p_i^2 r_i^2 v^2 x^2 - 32c^3 d_1 p_i q_1 r^2 r_i v v_i x + 32c^3 d_1 p_i q_1 r_i v v_i x^3 + 4c^3 d_1 q_1^2 r^4 v_i^2 - 8c^3 d_1 q_1^2 r^2 v_i^2 x^2$$

$$+ 4c^3 d_1 q_1^2 v_i^2 x^4 + 16c^3 d_1 q_i^2 r_i^2 v^2 x^2 + 16c^3 d_2 q_i^2 r^2 r_i^2 v^2 + 16c^3 d_2 q_i^2 r_i^2 v^2 x^2 + 32c^2 d_1^2 p_1^2 r^2 r_i^2 x^2$$

$$+ 32c^2 d_1^2 p_1^2 r^2 v_i^2 x^2 - 32c^2 d_1^2 p_1 q_1 r^3 r_i^2 x - 32c^2 d_1^2 p_1 q_1 r^3 v_i^2 x + 32c^2 d_1^2 p_1 q_1 r r_i^2 x^3 + 32c^2 d_1^2 p_1 q_1 r v_i^2 x^3$$

$$+ 8c^2 d_1^2 q_1^2 r^4 r_i^2 + 8c^2 d_1^2 q_1^2 r^4 v_i^2 - 16c^2 d_1^2 q_1^2 r^2 r_i^2 x^2 - 16c^2 d_1^2 q_1^2 r^2 v_i^2 x^2 + 8c^2 d_1^2 q_1^2 r_i^2 x^4 + 8c^2 d_1^2 q_1^2 v_i^2 x^4$$

$$+ 48c^2 d_1 d_2 p_1^2 p_i^2 r^2 r_i^2 + 48c^2 d_1 d_2 p_1^2 q_i^2 r^2 r_i^2 + 8c^2 d_1 d_2 p_1^2 r^4 r_i^2 + 16c^2 d_1 d_2 p_1^2 r^4 v_i^2 + 16c^2 d_1 d_2 p_1^2 r^2 r_i^2 x^2$$

$$+ 32c^2 d_1 d_2 p_1^2 r^2 v_i^2 x^2 + 8c^2 d_1 d_2 p_1^2 r_i^2 x^4 + 16c^2 d_1 d_2 p_1^2 v_i^2 x^4 + 64c^2 d_1 d_2 p_1 p_i r^3 r_i v v_i + 64c^2 d_1 d_2 p_1 p_i r r_i v v_i x^2$$

$$+ 48c^2 d_1 d_2 p_i^2 q_1^2 r^2 r_i^2 + 8c^2 d_1 d_2 p_i^2 r^4 r_i^2 + 32c^2 d_1 d_2 p_i^2 r^2 r_i^2 v^2 + 16c^2 d_1 d_2 p_i^2 r^2 r_i^2 x^2 + 32c^2 d_1 d_2 p_i^2 r_i^2 v^2 x^2$$

$$+ 8c^2 d_1 d_2 p_i^2 r_i^2 x^4 + 64c^2 d_1 d_2 p_i q_1 r^2 r_i v v_i x + 64c^2 d_1 d_2 p_i q_1 r v v_i x^3 + 48c^2 d_1 d_2 q_1^2 q_i^2 r^2 r_i^2 + 8c^2 d_1 d_2 q_1^2 r^4 r_i^2$$

$$+ 16c^2 d_1 d_2 q_1^2 r^4 v_i^2 + 16c^2 d_1 d_2 q_1^2 r^2 r_i^2 x^2 + 32c^2 d_1 d_2 q_1^2 r^2 v_i^2 x^2 + 8c^2 d_1 d_2 q_1^2 r_i^2 x^4 + 16c^2 d_1 d_2 q_1^2 v_i^2 x^4$$

$$+ 8c^2 d_1 d_2 q_i^2 r^4 r_i^2 + 32c^2 d_1 d_2 q_i^2 r^2 r_i^2 v^2 + 16c^2 d_1 d_2 q_i^2 r^2 r_i^2 x^2 + 32c^2 d_1 d_2 q_i^2 r_i^2 v^2 x^2 + 8c^2 d_1 d_2 q_i^2 r_i^2 x^4$$

$$+ 8c^2 d_2^2 q_i^2 r^4 r_i^2 + 16c^2 d_2^2 q_i^2 r^2 r_i^2 x^2 + 8c^2 d_2^2 q_i^2 r_i^2 x^4 + 16cd_1^2 d_2 p_1^2 r^4 r_i^2 + 16cd_1^2 d_2 p_1^2 r^4 v_i^2 + 32cd_1^2 d_2 p_1^2 r^2 r_i^2 x^2$$

$$
\begin{aligned}
&+ 32cd_1^2d_2p_1^2r^2v_i^2x^2 + 16cd_1^2d_2p_1^2r_i^2x^4 + 16cd_1^2d_2p_1^2v_i^2x^4 + 16cd_1^2d_2q_1^2r^4r_i^2 + 16cd_1^2d_2q_1^2r^4v_i^2 \\
&+ 32cd_1^2d_2q_1^2r^2r_i^2x^2 + 32cd_1^2d_2q_1^2r^2v_i^2x^2 + 16cd_1^2d_2q_1^2r_i^2x^4 + 16cd_1^2d_2q_1^2v_i^2x^4 + 16cd_1d_2^2p_i^2r^4r_i^2 \\
&+ 32cd_1d_2^2p_i^2r^2r_i^2x^2 + 16cd_1d_2^2p_i^2r_i^2x^4 + 16cd_1d_2^2q_i^2r^4r_i^2 + 32cd_1d_2^2q_i^2r^2r_i^2x^2 + 16cd_1d_2^2q_i^2r_i^2x^4 \\
&- 16c^3d_1p_1rvv_i^2x^2 - 16c^3d_1p_ir_iv^2v_ix^2 + 8c^3d_1q_1r^2vv_i^2x - 8c^3d_1q_1vv_i^2x^3 - 32c^2d_1^2p_1rr_i^2vx^2 \\
&- 32c^2d_1^2p_1rvv_i^2x^2 + 16c^2d_1^2q_1r^2r_i^2vx + 16c^2d_1^2q_1r^2vv_i^2x - 16c^2d_1^2q_1r_i^2vx^3 - 16c^2d_1^2q_1vv_i^2x^3 \\
&- 48r^2v_ip_1^2p_ir_id_2c^2d_1 - 48rp_1p_i^2vr_i^2d_2c^2d_1 - 48rq_i^2p_1vr_i^2d_2c^2d_1 - 16c^2d_1d_2p_1r^3r_i^2v - 32c^2d_1d_2p_1r^3vv_i^2 \\
&- 16c^2d_1d_2p_1rr_i^2vx^2 - 32c^2d_1d_2p_1rvv_i^2x^2 - 48r^2v_iq_1^2p_ir_id_2c^2d_1 - 8c^2d_1d_2p_ir^4r_iv_i - 32c^2d_1d_2p_ir^2r_iv^2v_i \\
&- 16c^2d_1d_2p_ir^2r_iv_ix^2 - 32c^2d_1d_2p_ir^2v^2v_ix^2 - 8c^2d_1d_2p_ir_iv_ix^4 - 16c^2d_1d_2q_1r^2r_i^2vx - 32c^2d_1d_2q_1r^2vv_i^2x \\
&- 16c^2d_1d_2q_1r_i^2vx^3 - 32c^2d_1d_2q_1vv_i^2x^3 - 32cd_1^2d_2p_1r^3r_i^2v - 32cd_1^2d_2p_1r^3vv_i^2 - 32cd_1^2d_2p_1rr_i^2vx^2 \\
&- 32cd_1^2d_2p_1rvv_i^2x^2 - 32cd_1^2d_2q_1r^2r_i^2vx - 32cd_1^2d_2q_1r^2vv_i^2x - 32cd_1^2d_2q_1r_i^2vx^3 - 32cd_1^2d_2q_1vv_i^2x^3 \\
&- 16cd_1d_2^2p_ir^4r_iv_i - 32cd_1d_2^2p_ir^2r_iv_ix^2 - 16cd_1d_2^2p_ir_iv_ix^4 + 4c^3d_1v^2v_i^2x^2 + 8c^2d_1^2r_i^2v^2x^2 \\
&+ 8c^2d_1^2v^2v_i^2x^2 + 12r^2v_i^2p_1^2d_2c^2d_1 + 48rv_ip_1p_ivr_id_2c^2d_1 + 12p_i^2v^2r_i^2d_2c^2d_1 + 12r^2v_i^2q_1^2d_2c^2d_1 \\
&+ 12q_i^2v^2r_i^2d_2c^2d_1 + 2c^2d_1d_2r^4v_i^2 + 8c^2d_1d_2r^2r_i^2v^2 + 16c^2d_1d_2r^2v^2v_i^2 + 4c^2d_1d_2r^2v_i^2x^2 + 8c^2d_1d_2r_i^2v^2x^2 \\
&+ 16c^2d_1d_2v^2v_i^2x^2 + 2c^2d_1d_2v_i^2x^4 + 12c^2d_2^2q_i^2r_i^2v^2 + 24r^2p_1^2r_i^2d_2cd_1^2 + 24r^2v_i^2p_1^2d_2cd_1^2 \\
&+ 24r^2q_1^2r_i^2d_2cd_1^2 + 24r^2v_i^2q_1^2d_2cd_1^2 + 4cd_1^2d_2r^4r_i^2 + 4cd_1^2d_2r^4v_i^2 + 16cd_1^2d_2r^2r_i^2v^2 + 8cd_1^2d_2r^2r_i^2x^2 \\
&+ 16cd_1^2d_2r^2v^2v_i^2 + 8cd_1^2d_2r^2v_i^2x^2 + 16cd_1^2d_2r_i^2v^2x^2 + 4cd_1^2d_2r_i^2x^4 + 16cd_1^2d_2v^2v_i^2x^2 + 4cd_1^2d_2v_i^2x^4 \\
&+ 24p_i^2r^2r_i^2d_2^2cd_1 + 24cd_1d_2^2p_i^2r_i^2v^2 + 24q_i^2r^2r_i^2d_2^2cd_1 + 24cd_1d_2^2q_i^2r_i^2v^2 + 4cd_1d_2^2r^4r_i^2 + 8cd_1d_2^2r^4v_i^2 \\
&+ 8cd_1d_2^2r^2r_i^2x^2 + 16cd_1d_2^2r^2v_i^2x^2 + 4cd_1d_2^2r_i^2x^4 + 8cd_1d_2^2v_i^2x^4 + 8d_1^2d_2^2r^4r_i^2 + 8d_1^2d_2^2r^4v_i^2 + 16d_1^2d_2^2r^2r_i^2x^2 \\
&+ 16d_1^2d_2^2r^2v_i^2x^2 + 8d_1^2d_2^2r_i^2x^4 + 8d_1^2d_2^2v_i^2x^4 - 12rv_i^2p_1vd_2c^2d_1 - 12p_iv_iv^2r_id_2c^2d_1 - 24rp_1vr_i^2d_2cd_1^2 \\
&- 24rv_i^2p_1vd_2cd_1^2 - 24r^2v_ip_ir_id_2^2cd_1 - 24cd_1d_2^2p_ir_iv^2v_i + 3v_i^2v^2d_2c^2d_1 + 6v^2r_i^2d_2cd_1^2 + 6v_i^2v^2d_2cd_1^2 \\
&+ 6r^2v_i^2d_2^2cd_1 + 6cd_1d_2^2r_i^2v^2 + 12cd_1d_2^2v^2v_i^2 + 12r^2r_i^2d_2^2d_1^2 + 12r^2v_i^2d_2^2d_1^2 + 12d_1^2d_2^2r_i^2v^2 + 12d_1^2d_2^2v^2v_i^2)
\end{aligned}
$$

- 12×12

$$
\begin{aligned}
\frac{4}{c^6}(&64c^3d_1p_1^2p_i^2r^2r_i^2x^2 + 64c^3d_1p_1^2q_i^2r^2r_i^2x^2 - 64c^3d_1p_1p_i^2q_1r^3r_i^2x + 64c^3d_1p_1p_i^2q_1rr_i^2x^3 \\
&- 64c^3d_1p_1q_1q_i^2r^3r_i^2x + 64c^3d_1p_1q_1q_i^2rr_i^2x^3 + 16c^3d_1p_i^2q_1^2r^4r_i^2 - 32c^3d_1p_i^2q_1^2r^2r_i^2x^2 + 16c^3d_1p_i^2q_1^2r_i^2x^4 \\
&+ 16c^3d_1q_1^2q_i^2r^4r_i^2 - 32c^3d_1q_1^2q_i^2r^2r_i^2x^2 + 16c^3d_1q_1^2q_i^2r_i^2x^4 + 16c^3d_2p_1^2q_i^2r^4r_i^2 + 32c^3d_2p_1^2q_i^2r^2r_i^2x^2 \\
&+ 16c^3d_2p_1^2q_i^2r_i^2x^4 + 16c^3d_2q_1^2q_i^2r^4r_i^2 + 32c^3d_2q_1^2q_i^2r^2r_i^2x^2 + 16c^3d_2q_1^2q_i^2r_i^2x^4 + 32c^2d_1d_2p_1^2p_i^2r^4r_i^2 \\
&+ 64c^2d_1d_2p_1^2p_i^2r^2r_i^2x^2 + 32c^2d_1d_2p_1^2p_i^2r_i^2x^4 + 32c^2d_1d_2p_1^2q_i^2r^4r_i^2 + 64c^2d_1d_2p_1^2q_i^2r^2r_i^2x^2 \\
&+ 32c^2d_1d_2p_1^2q_i^2r_i^2x^4 + 32c^2d_1d_2p_i^2q_1^2r^4r_i^2 + 64c^2d_1d_2p_i^2q_1^2r^2r_i^2x^2 + 32c^2d_1d_2p_i^2q_1^2r_i^2x^4 \\
&+ 32c^2d_1d_2q_1^2q_i^2r^4r_i^2 + 64c^2d_1d_2q_1^2q_i^2r^2r_i^2x^2 + 32c^2d_1d_2q_1^2q_i^2r_i^2x^4 - 64c^3d_1p_1^2p_ir^2r_iv_ix^2 \\
&- 64c^3d_1p_1p_i^2rr_i^2vx^2 + 64c^3d_1p_1p_iq_1r^3r_iv_ix - 64c^3d_1p_1p_iq_1rr_iv_ix^3 - 64c^3d_1p_1q_i^2rr_i^2vx^2 \\
&+ 32c^3d_1p_i^2q_1r^2r_i^2vx - 32c^3d_1p_i^2q_1r_i^2vx^3 - 16c^3d_1p_iq_1^2r^4r_iv_i + 32c^3d_1p_iq_1^2r^2r_iv_ix^2 - 16c^3d_1p_iq_1^2r_iv_ix^4 \\
&+ 32c^3d_1q_1q_i^2r^2r_i^2vx - 32c^3d_1q_1q_i^2r_i^2vx^3 - 32c^3d_2p_1q_i^2r^3r_i^2v - 32c^3d_2p_1q_i^2rr_i^2vx^2 - 32c^3d_2q_1q_i^2r^2r_i^2vx \\
&- 32c^3d_2q_1q_i^2r_i^2vx^3 - 32c^2d_1d_2p_1^2p_ir^4r_iv_i - 64c^2d_1d_2p_1^2p_ir^2r_iv_ix^2 - 32c^2d_1d_2p_1^2p_ir_iv_ix^4 \\
&- 64c^2d_1d_2p_1p_i^2r^3r_i^2v - 64c^2d_1d_2p_1p_i^2rr_i^2vx^2 - 64c^2d_1d_2p_1q_i^2r^3r_i^2v - 64c^2d_1d_2p_1q_i^2rr_i^2vx^2 \\
&- 64c^2d_1d_2p_i^2q_1r^2r_i^2vx - 64c^2d_1d_2p_i^2q_1r_i^2vx^3 - 32c^2d_1d_2p_iq_1^2r^4r_iv_i - 64c^2d_1d_2p_iq_1^2r^2r_iv_ix^2 \\
&- 32c^2d_1d_2p_iq_1^2r_iv_ix^4 - 64c^2d_1d_2q_1q_i^2r^2r_i^2vx - 64c^2d_1d_2q_1q_i^2r_i^2vx^3 + 16c^3d_1p_1^2r^2v_i^2x^2 \\
&+ 64c^3d_1p_1p_irr_ivv_ix^2 - 16c^3d_1p_1q_1r^3v_i^2x + 16c^3d_1p_1q_1rv_i^2x^3 + 16c^3d_1p_i^2r_i^2v^2x^2 \\
&- 32c^3d_1p_iq_1r^2r_ivv_ix + 32c^3d_1p_iq_1r_ivv_ix^3 + 4c^3d_1q_1^2r^4v_i^2 - 8c^3d_1q_1^2r^2v_i^2x^2 + 4c^3d_1q_1^2v_i^2x^4
\end{aligned}
$$

$$+ 16c^3d_1q_i^2r_i^2v^2x^2 + 16c^3d_2q_i^2r^2r_i^2v^2 + 16c^3d_2q_i^2r_i^2v^2x^2 + 32c^2d_1^2p_1^2r^2r_i^2x^2 + 32c^2d_1^2p_1^2r^2v_i^2x^2$$
$$- 32c^2d_1^2p_1q_1r^3r_i^2x - 32c^2d_1^2p_1q_1r^3v_i^2x + 32c^2d_1^2p_1q_1rr_i^2x^3 + 32c^2d_1^2p_1q_1rv_i^2x^3 + 8c^2d_1^2q_1^2r^4r_i^2$$
$$+ 8c^2d_1^2q_1^2r^4v_i^2 - 16c^2d_1^2q_1^2r^2r_i^2x^2 - 16c^2d_1^2q_1^2r^2v_i^2x^2 + 8c^2d_1^2q_1^2r_i^2x^4 + 8c^2d_1^2q_1^2v_i^2x^4 + 48c^2d_1d_2p_1^2p_i^2r^2r_i^2$$
$$+ 48c^2d_1d_2p_1^2q_i^2r^2r_i^2 + 8c^2d_1d_2p_1^2r^4r_i^2 + 16c^2d_1d_2p_1^2r^4v_i^2 + 16c^2d_1d_2p_1^2r^2r_i^2x^2 + 32c^2d_1d_2p_1^2r^2v_i^2x^2$$
$$+ 8c^2d_1d_2p_1^2r_i^2x^4 + 16c^2d_1d_2p_1^2v_i^2x^4 + 64c^2d_1d_2p_1p_ir^3r_ivv_i + 64c^2d_1d_2p_1p_irr_ivv_ix^2$$
$$+ 48c^2d_1d_2p_i^2q_1^2r^2r_i^2 + 8c^2d_1d_2p_i^2r^4r_i^2 + 32c^2d_1d_2p_i^2r^2r_i^2v^2 + 16c^2d_1d_2p_i^2r^2r_i^2x^2 + 32c^2d_1d_2p_i^2r_i^2v^2x^2$$
$$+ 8c^2d_1d_2p_i^2r_i^2x^4 + 64c^2d_1d_2p_iq_1r^2r_ivv_ix + 64c^2d_1d_2p_iq_1r_ivv_ix^3 + 48c^2d_1d_2q_1^2q_i^2r^2r_i^2 + 8c^2d_1d_2q_1^2r^4r_i^2$$
$$+ 16c^2d_1d_2q_1^2r^4v_i^2 + 16c^2d_1d_2q_1^2r^2r_i^2x^2 + 32c^2d_1d_2q_1^2r^2v_i^2x^2 + 8c^2d_1d_2q_1^2r_i^2x^4 + 16c^2d_1d_2q_1^2v_i^2x^4$$
$$+ 8c^2d_1d_2q_i^2r^4r_i^2 + 32c^2d_1d_2q_i^2r^2r_i^2v^2 + 16c^2d_1d_2q_i^2r^2r_i^2x^2 + 32c^2d_1d_2q_i^2r_i^2v^2x^2 + 8c^2d_1d_2q_i^2r_i^2x^4$$
$$+ 8c^2d_2^2q_i^2r^4r_i^2 + 16c^2d_2^2q_i^2r^2r_i^2x^2 + 8c^2d_2^2q_i^2r_i^2x^4 + 16cd_1^2d_2p_1^2r^4r_i^2 + 16cd_1^2d_2p_1^2r^4v_i^2 + 32cd_1^2d_2p_1^2r^2r_i^2x^2$$
$$+ 32cd_1^2d_2p_1^2r^2v_i^2x^2 + 16cd_1^2d_2p_1^2r_i^2x^4 + 16cd_1^2d_2p_1^2v_i^2x^4 + 16cd_1^2d_2q_1^2r^4r_i^2 + 16cd_1^2d_2q_1^2r^4v_i^2$$
$$+ 32cd_1^2d_2q_1^2r^2r_i^2x^2 + 32cd_1^2d_2q_1^2r^2v_i^2x^2 + 16cd_1^2d_2q_1^2r_i^2x^4 + 16cd_1^2d_2q_1^2v_i^2x^4 + 16cd_1d_2^2p_i^2r^4r_i^2$$
$$+ 32cd_1d_2^2p_i^2r^2r_i^2x^2 + 16cd_1d_2^2p_i^2r_i^2x^4 + 16cd_1d_2^2q_i^2r^4r_i^2 + 32cd_1d_2^2q_i^2r^2r_i^2x^2 + 16cd_1d_2^2q_i^2r_i^2x^4$$
$$- 16c^3d_1p_1rvv_i^2x^2 - 16c^3d_1p_ir_iv^2v_ix^2 + 8c^3d_1q_1r^2vv_i^2x - 8c^3d_1q_1vv_i^2x^3 - 32c^2d_1^2p_1rr_i^2vx^2$$
$$- 32c^2d_1^2p_1rvv_i^2x^2 + 16c^2d_1^2q_1r^2r_i^2vx + 16c^2d_1^2q_1r^2vv_i^2x - 16c^2d_1^2q_1r_i^2vx^3 - 16c^2d_1^2q_1vv_i^2x^3$$
$$- 48c^2d_1d_2p_1^2p_ir^2r_iv_i - 48c^2d_1d_2p_1p_i^2rr_i^2v - 48c^2d_1d_2p_1q_i^2rr_i^2v - 16c^2d_1d_2p_1r^3r_i^2v - 32c^2d_1d_2p_1r^3vv_i^2$$
$$- 16c^2d_1d_2p_1rr_i^2vx^2 - 32c^2d_1d_2p_1rvv_i^2x^2 - 48c^2d_1d_2p_iq_1^2r^2r_iv_i - 8c^2d_1d_2p_ir^4r_iv_i$$
$$- 32c^2d_1d_2p_ir^2r_iv^2v_i - 16c^2d_1d_2p_ir^2r_iv_ix^2 - 32c^2d_1d_2p_ir_iv^2v_ix^2 - 8c^2d_1d_2p_ir_iv_ix^4$$
$$- 16c^2d_1d_2q_1r^2r_i^2vx - 32c^2d_1d_2q_1r^2vv_i^2x - 16c^2d_1d_2q_1r_i^2vx^3 - 32c^2d_1d_2q_1vv_i^2x^3 - 32cd_1^2d_2p_1r^3r_i^2v$$
$$- 32cd_1^2d_2p_1r^3vv_i^2 - 32cd_1^2d_2p_1rr_i^2vx^2 - 32cd_1^2d_2p_1rvv_i^2x^2 - 32cd_1^2d_2q_1r^2r_i^2vx - 32cd_1^2d_2q_1r^2vv_i^2x$$
$$- 32cd_1^2d_2q_1r_i^2vx^3 - 32cd_1^2d_2q_1vv_i^2x^3 - 16cd_1d_2^2p_ir^4r_iv_i - 32cd_1d_2^2p_ir^2r_iv_ix^2 - 16cd_1d_2^2p_ir_iv_ix^4$$
$$+ 4c^3d_1v^2v_i^2x^2 + 8c^2d_1^2r_i^2v^2x^2 + 8c^2d_1^2v^2v_i^2x^2 + 12c^2d_1d_2p_1^2r^2v_i^2 + 48c^2d_1d_2p_1p_irr_ivv_i + 12c^2d_1d_2p_i^2r_i^2v^2$$
$$+ 12c^2d_1d_2q_1^2r^2v_i^2 + 12c^2d_1d_2q_i^2r_i^2v^2 + 2c^2d_1d_2r^4v_i^2 + 8c^2d_1d_2r^2r_i^2v^2 + 16c^2d_1d_2r^2v^2v_i^2 + 4c^2d_1d_2r^2v_i^2x^2$$
$$+ 8c^2d_1d_2r_i^2v^2x^2 + 16c^2d_1d_2v^2v_i^2x^2 + 2c^2d_1d_2v_i^2x^4 + 12c^2d_2^2q_i^2r_i^2v^2 + 24cd_1^2d_2p_1^2r^2r_i^2 + 24cd_1^2d_2p_1^2r^2v_i^2$$
$$+ 24cd_1^2d_2q_1^2r^2r_i^2 + 24cd_1^2d_2q_1^2r^2v_i^2 + 4cd_1^2d_2r^4r_i^2 + 4cd_1^2d_2r^4v_i^2 + 16cd_1^2d_2r^2r_i^2v^2 + 8cd_1^2d_2r^2r_i^2x^2$$
$$+ 16cd_1^2d_2r^2v^2v_i^2 + 8cd_1^2d_2r^2v_i^2x^2 + 16cd_1^2d_2r_i^2v^2x^2 + 4cd_1^2d_2r_i^2x^4 + 16cd_1^2d_2v^2v_i^2x^2 + 4cd_1^2d_2v_i^2x^4$$
$$+ 24cd_1d_2^2p_i^2r^2r_i^2 + 24cd_1d_2^2p_i^2r_i^2v^2 + 24cd_1d_2^2q_i^2r^2r_i^2 + 24cd_1d_2^2q_i^2r_i^2v^2 + 4cd_1d_2^2r^4r_i^2 + 8cd_1d_2^2r^4v_i^2$$
$$+ 8cd_1d_2^2r^2r_i^2x^2 + 16cd_1d_2^2r^2v_i^2x^2 + 4cd_1d_2^2r_i^2x^4 + 8cd_1d_2^2v_i^2x^4 + 8d_1^2d_2^2r^4r_i^2 + 8d_1^2d_2^2r^4v_i^2$$
$$+ 16d_1^2d_2^2r^2r_i^2x^2 + 16d_1^2d_2^2r^2v_i^2x^2 + 8d_1^2d_2^2r_i^2x^4 + 8d_1^2d_2^2v_i^2x^4 - 12c^2d_1d_2p_1rvv_i^2 - 12c^2d_1d_2p_ir_iv^2v_i$$
$$- 24cd_1^2d_2p_1rr_i^2v - 24cd_1^2d_2p_1rvv_i^2 - 24cd_1d_2^2p_ir^2r_iv_i - 24cd_1d_2^2p_ir_iv^2v_i + 3c^2d_1d_2v^2v_i^2$$
$$+ 6cd_1^2d_2r_i^2v^2 + 6cd_1^2d_2v^2v_i^2 + 6cd_1d_2^2r^2v_i^2 + 6cd_1d_2^2r_i^2v^2 + 12cd_1d_2^2v^2v_i^2 + 12d_1^2d_2^2r^2r_i^2$$
$$+ 12d_1^2d_2^2r^2v_i^2 + 12d_1^2d_2^2r_i^2v^2 + 12d_1^2d_2^2v^2v_i^2)(16c^2p_2^2x^2 - 32c^2p_2q_2rx + 16c^2q_2^2r^2 + 4c^2p_2^2 + 4c^2q_2^2$$
$$+ 4c^2r^2 + 4c^2x^2 + 8cd_3p_2^2 + 8cd_3q_2^2 + 8cd_3r^2 + 8cd_3x^2 + c^2 + 4cd_3 + 4d_3^2)$$

- 13×13

$$\frac{4}{c^6}(64c^3d_1p_1^2p_i^2r^2r_i^2x^2 + 64c^3d_1p_1^2q_i^2r^2r_i^2x^2 - 64c^3d_1p_1p_i^2q_1r^3r_i^2x + 64c^3d_1p_1p_i^2q_1rr_i^2x^3$$
$$- 64c^3d_1p_1q_1q_i^2r^3r_i^2x + 64c^3d_1p_1q_1q_i^2rr_i^2x^3 + 16c^3d_1p_i^2q_1^2r^4r_i^2 - 32c^3d_1p_i^2q_1^2r^2r_i^2x^2 + 16c^3d_1p_i^2q_1^2r_i^2x^4$$
$$+ 16c^3d_1q_1^2q_i^2r^4r_i^2 - 32c^3d_1q_1^2q_i^2r^2r_i^2x^2 + 16c^3d_1q_1^2q_i^2r_i^2x^4 + 16c^3d_2p_1^2q_i^2r^4r_i^2 + 32c^3d_2p_1^2q_i^2r^2r_i^2x^2$$
$$+ 16c^3d_2p_1^2q_i^2r_i^2x^4 + 16c^3d_2q_1^2q_i^2r^4r_i^2 + 32c^3d_2q_1^2q_i^2r^2r_i^2x^2 + 16c^3d_2q_1^2q_i^2r_i^2x^4 + 32c^2d_1d_2p_1^2p_i^2r^4r_i^2$$

$$+ 64c^2d_1d_2p_1^2p_i^2r^2r_i^2x^2 + 32c^2d_1d_2p_1^2p_i^2r_i^2x^4 + 32c^2d_1d_2p_1^2q_i^2r^4r_i^2 + 64c^2d_1d_2p_1^2q_i^2r^2r_i^2x^2$$

$$+ 32c^2d_1d_2p_1^2q_i^2r_i^2x^4 + 32c^2d_1d_2p_i^2q_1^2r^4r_i^2 + 64c^2d_1d_2p_i^2q_1^2r^2r_i^2x^2 + 32c^2d_1d_2p_i^2q_1^2r_i^2x^4$$

$$+ 32c^2d_1d_2q_1^2q_i^2r^4r_i^2 + 64c^2d_1d_2q_1^2q_i^2r^2r_i^2x^2 + 32c^2d_1d_2q_1^2q_i^2r_i^2x^4 - 64c^3d_1p_1^2p_ir^2r_iv_ix^2$$

$$- 64c^3d_1p_1p_i^2rr_i^2vx^2 + 64c^3d_1p_1p_iq_1r^3r_iv_ix - 64c^3d_1p_1p_iq_1rr_iv_ix^3 - 64c^3d_1p_1q_i^2rr_i^2vx^2$$

$$+ 32c^3d_1p_i^2q_1r^2r_i^2vx - 32c^3d_1p_i^2q_1r_i^2vx^3 - 16c^3d_1p_iq_1^2r^4r_iv_i + 32c^3d_1p_iq_1^2r^2r_iv_ix^2 - 16c^3d_1p_iq_1^2r_iv_ix^4$$

$$+ 32c^3d_1q_1q_i^2r^2r_i^2vx - 32c^3d_1q_1q_i^2r_i^2vx^3 - 32c^3d_2p_1q_i^2r^3r_i^2v - 32c^3d_2p_1q_i^2rr_i^2vx^2 - 32c^3d_2q_1q_i^2r^2r_i^2vx$$

$$- 32c^3d_2q_1q_i^2r_i^2vx^3 - 32c^2d_1d_2p_1^2p_ir^4r_iv_i - 64c^2d_1d_2p_1^2p_ir^2r_iv_ix^2 - 32c^2d_1d_2p_1^2p_ir_iv_ix^4$$

$$- 64c^2d_1d_2p_1p_i^2r^3r_i^2v - 64c^2d_1d_2p_1p_i^2rr_i^2vx^2 - 64c^2d_1d_2p_1q_i^2r^3r_i^2v - 64c^2d_1d_2p_1q_i^2rr_i^2vx^2$$

$$- 64c^2d_1d_2p_i^2q_1r^2r_i^2vx - 64c^2d_1d_2p_i^2q_1r_i^2vx^3 - 32c^2d_1d_2p_iq_1^2r^4r_iv_i - 64c^2d_1d_2p_iq_1^2r^2r_iv_ix^2$$

$$- 32c^2d_1d_2p_iq_1^2r_iv_ix^4 - 64c^2d_1d_2q_1q_i^2r^2r_i^2vx - 64c^2d_1d_2q_1q_i^2r_i^2vx^3 + 16c^3d_1p_1^2r^2r_i^2v_i^2x^2$$

$$+ 64c^3d_1p_1p_irr_ivv_ix^2 - 16c^3d_1p_1q_1r^3r_iv_i^2x + 16c^3d_1p_1q_1rv_i^2x^3 + 16c^3d_1p_i^2r_i^2v^2x^2$$

$$- 32c^3d_1p_iq_1r^2r_ivv_ix + 32c^3d_1p_iq_1r_ivv_ix^3 + 4c^3d_1q_1^2r^4v_i^2 - 8c^3d_1q_1^2r^2v_i^2x^2 + 4c^3d_1q_1^2v_i^2x^4$$

$$+ 16c^3d_1q_i^2r_i^2v^2x^2 + 16c^3d_2q_i^2r^2r_i^2v^2 + 16c^3d_2q_i^2r_i^2v^2x^2 + 32c^2d_1^2p_1^2r^2r_i^2x^2 + 32c^2d_1^2p_1^2r^2v_i^2x^2$$

$$- 32c^2d_1^2p_1q_1r^3r_i^2x - 32c^2d_1^2p_1q_1r^3v_i^2x + 32c^2d_1^2p_1q_1rr_i^2x^3 + 32c^2d_1^2p_1q_1rv_i^2x^3 + 8c^2d_1^2q_1^2r^4r_i^2$$

$$+ 8c^2d_1^2q_1^2r^4v_i^2 - 16c^2d_1^2q_1^2r^2r_i^2x^2 - 16c^2d_1^2q_1^2r^2v_i^2x^2 + 8c^2d_1^2q_1^2r_i^2x^4 + 8c^2d_1^2q_1^2v_i^2x^4 + 48c^2d_1d_2p_1^2p_i^2r^2r_i^2$$

$$+ 48c^2d_1d_2p_1^2q_i^2r^2r_i^2 + 8c^2d_1d_2p_1^2r^4r_i^2 + 16c^2d_1d_2p_1^2r^4v_i^2 + 16c^2d_1d_2p_1^2r^2r_i^2x^2 + 32c^2d_1d_2p_1^2r^2v_i^2x^2$$

$$+ 8c^2d_1d_2p_1^2r_i^2x^4 + 16c^2d_1d_2p_1^2v_i^2x^4 + 64c^2d_1d_2p_1p_ir^3r_ivv_i + 64c^2d_1d_2p_1p_irr_ivv_ix^2$$

$$+ 48c^2d_1d_2p_i^2q_1^2r^2r_i^2 + 8c^2d_1d_2p_i^2r^4r_i^2 + 32c^2d_1d_2p_i^2r^2r_i^2v^2 + 16c^2d_1d_2p_i^2r^2r_i^2x^2 + 32c^2d_1d_2p_i^2r_i^2v^2x^2$$

$$+ 8c^2d_1d_2p_i^2r_i^2x^4 + 64c^2d_1d_2p_iq_1r^2r_ivv_ix + 64c^2d_1d_2p_iq_1r_ivv_ix^3 + 48c^2d_1d_2q_1^2q_i^2r^2r_i^2 + 8c^2d_1d_2q_1^2r^4r_i^2$$

$$+ 16c^2d_1d_2q_1^2r^4v_i^2 + 16c^2d_1d_2q_1^2r^2r_i^2x^2 + 32c^2d_1d_2q_1^2r^2v_i^2x^2 + 8c^2d_1d_2q_1^2r_i^2x^4 + 16c^2d_1d_2q_1^2v_i^2x^4$$

$$+ 8c^2d_1d_2q_i^2r^4r_i^2 + 32c^2d_1d_2q_i^2r^2r_i^2v^2 + 16c^2d_1d_2q_i^2r^2r_i^2x^2 + 32c^2d_1d_2q_i^2r_i^2v^2x^2 + 8c^2d_1d_2q_i^2r_i^2x^4$$

$$+ 8c^2d_2^2q_i^2r^4r_i^2 + 16c^2d_2^2q_i^2r^2r_i^2x^2 + 8c^2d_2^2q_i^2r_i^2x^4 + 16cd_1^2d_2p_1^2r^4r_i^2 + 16cd_1^2d_2p_1^2r^4v_i^2 + 32cd_1^2d_2p_1^2r^2r_i^2x^2$$

$$+ 32cd_1^2d_2p_1^2r^2v_i^2x^2 + 16cd_1^2d_2p_1^2r_i^2x^4 + 16cd_1^2d_2p_1^2v_i^2x^4 + 16cd_1^2d_2q_1^2r^4r_i^2 + 16cd_1^2d_2q_1^2r^4v_i^2$$

$$+ 32cd_1^2d_2q_1^2r^2r_i^2x^2 + 32cd_1^2d_2q_1^2r^2v_i^2x^2 + 16cd_1^2d_2q_1^2r_i^2x^4 + 16cd_1^2d_2q_1^2v_i^2x^4 + 16cd_1d_2^2p_i^2r^4r_i^2$$

$$+ 32cd_1d_2^2p_i^2r^2r_i^2x^2 + 16cd_1d_2^2p_i^2r_i^2x^4 + 16cd_1d_2^2q_i^2r^4r_i^2 + 32cd_1d_2^2q_i^2r^2r_i^2x^2 + 16cd_1d_2^2q_i^2r_i^2x^4$$

$$- 16c^3d_1p_1rvv_i^2x^2 - 16c^3d_1p_ir_iv^2v_ix^2 + 8c^3d_1q_1r^2vv_i^2x - 8c^3d_1q_1vv_i^2x^3 - 32c^2d_1^2p_1rr_i^2vx^2$$

$$- 32c^2d_1^2p_1rvv_i^2x^2 + 16c^2d_1^2q_1r^2r_i^2vx + 16c^2d_1^2q_1r^2vv_i^2x - 16c^2d_1^2q_1r_i^2vx^3 - 16c^2d_1^2q_1vv_i^2x^3$$

$$- 48c^2d_1d_2p_1^2p_ir^2r_iv_i - 48c^2d_1d_2p_1p_i^2rr_i^2v - 48c^2d_1d_2p_1q_i^2rr_i^2v - 16c^2d_1d_2p_1r^3r_i^2v - 32c^2d_1d_2p_1r^3vv_i^2$$

$$- 16c^2d_1d_2p_1rr_i^2vx^2 - 32c^2d_1d_2p_1rvv_i^2x^2 - 48c^2d_1d_2p_iq_1^2r^2r_iv_i - 8c^2d_1d_2p_ir^4r_iv_i$$

$$- 32c^2d_1d_2p_ir^2r_iv^2v_i - 16c^2d_1d_2p_ir^2r_iv_ix^2 - 32c^2d_1d_2p_ir_iv^2v_ix^2 - 8c^2d_1d_2p_ir_iv_ix^4$$

$$- 16c^2d_1d_2q_1r^2r_i^2vx - 32c^2d_1d_2q_1r^2vv_i^2x - 16c^2d_1d_2q_1r_i^2vx^3 - 32c^2d_1d_2q_1vv_i^2x^3 - 32cd_1^2d_2p_1r^3r_i^2v$$

$$- 32cd_1^2d_2p_1r^3vv_i^2 - 32cd_1^2d_2p_1rr_i^2vx^2 - 32cd_1^2d_2p_1rvv_i^2x^2 - 32cd_1^2d_2q_1r^2r_i^2vx - 32cd_1^2d_2q_1r^2vv_i^2x$$

$$- 32cd_1^2d_2q_1r_i^2vx^3 - 32cd_1^2d_2q_1vv_i^2x^3 - 16cd_1d_2^2p_ir^4r_iv_i - 32cd_1d_2^2p_ir^2r_iv_ix^2 - 16cd_1d_2^2p_ir_iv_ix^4$$

$$+ 4c^3d_1v^2v_i^2x^2 + 8c^2d_1^2r_i^2v^2x^2 + 8c^2d_1^2v^2v_i^2x^2 + 12c^2d_1d_2p_1^2r^2v_i^2 + 48c^2d_1d_2p_1p_irr_ivv_i + 12c^2d_1d_2p_i^2r_i^2v^2$$

$$+ 12c^2d_1d_2q_1^2r^2v_i^2 + 12c^2d_1d_2q_i^2r_i^2v^2 + 2c^2d_1d_2r^4v_i^2 + 8c^2d_1d_2r^2r_i^2v^2 + 16c^2d_1d_2r^2v^2v_i^2 + 4c^2d_1d_2r^2v_i^2x^2$$

$$+ 8c^2d_1d_2r_i^2v^2x^2 + 16c^2d_1d_2v^2v_i^2x^2 + 2c^2d_1d_2v_i^2x^4 + 12c^2d_2^2q_i^2r_i^2v^2 + 24cd_1^2d_2p_1^2r^2r_i^2 + 24cd_1^2d_2p_1^2r^2v_i^2$$

$$+ 24cd_1^2d_2q_1^2r^2r_i^2 + 24cd_1^2d_2q_1^2r^2v_i^2 + 4cd_1^2d_2r^4r_i^2 + 4cd_1^2d_2r^4v_i^2 + 16cd_1^2d_2r^2r_i^2v^2 + 8cd_1^2d_2r^2r_i^2x^2$$

$$+ 16cd_1^2d_2r^2v^2v_i^2 + 8cd_1^2d_2r^2v_i^2x^2 + 16cd_1^2d_2r_i^2v^2x^2 + 4cd_1^2d_2r_i^2x^4 + 16cd_1^2d_2v^2v_i^2x^2 + 4cd_1^2d_2v_i^2x^4$$

$$+ 24cd_1d_2^2p_i^2r^2r_i^2 + 24cd_1d_2^2p_i^2r_i^2v^2 + 24cd_1d_2^2q_i^2r^2r_i^2 + 24cd_1d_2^2q_i^2r_i^2v^2 + 4cd_1d_2^2r^4r_i^2 + 8cd_1d_2^2r^4v_i^2$$

$$+ 8cd_1d_2^2r^2r_i^2x^2 + 16cd_1d_2^2r^2v_i^2x^2 + 4cd_1d_2^2r_i^2x^4 + 8cd_1d_2^2v_i^2x^4 + 8d_1^2d_2^2r^4r_i^2 + 8d_1^2d_2^2r^4v_i^2$$
$$+ 16d_1^2d_2^2r^2r_i^2x^2 + 16d_1^2d_2^2r^2v_i^2x^2 + 8d_1^2d_2^2r_i^2x^4 + 8d_1^2d_2^2v_i^2x^4 - 12c^2d_1d_2p_1rvv_i^2 - 12c^2d_1d_2p_ir_iv^2v_i$$
$$- 24cd_1^2d_2p_1rr_i^2v - 24cd_1^2d_2p_1rvv_i^2 - 24cd_1d_2^2p_ir^2r_iv_i - 24cd_1d_2^2p_ir_iv^2v_i + 3c^2d_1d_2v^2v_i^2$$
$$+ 6cd_1^2d_2r_i^2v^2 + 6cd_1^2d_2v^2v_i^2 + 6cd_1d_2^2r^2v_i^2 + 6cd_1d_2^2r_i^2v^2 + 12cd_1d_2^2v^2v_i^2 + 12d_1^2d_2^2r^2r_i^2$$
$$+ 12d_1^2d_2^2r^2v_i^2 + 12d_1^2d_2^2r_i^2v^2 + 12d_1^2d_2^2v^2v_i^2)(4c^2p_2^2 + 4c^2q_2^2 + 8cd_3p_2^2 + 8cd_3q_2^2 + c^2 + 4cd_3 + 4d_3^2)$$