$$\frac{1}{6} a 2 = \frac{a^2}{6}$$

$$\frac{a}{2}\left(\frac{a}{3}+\frac{b}{2}\right) - \frac{2}{3}b\left(\frac{a}{4}+\frac{3}{2}a\right) - \left(\frac{1}{3}a^2 - \frac{2}{3}b^2 - \frac{11}{6}ab\right)\cdot\frac{1}{2} =$$

$$= \frac{a^2}{6} + \frac{ab}{4} - \frac{2}{12}ab - \frac{2}{6}ab - \left(\frac{1}{6}a^2 - \frac{2}{6}b^2 - \frac{11}{12}ab\right) =$$

$$= \frac{1}{6}a^2 + \frac{1}{4}ab - \frac{1}{6}ab - 1ab - \frac{1}{6}a^2 + \frac{1}{3}b^2 + \frac{11}{12}ab =$$

$$= \left(\frac{1}{4} - \frac{1}{6} - 1 + \frac{11}{12}\right)ab + \frac{1}{3}b^2 = \left(\frac{3-2-12+11}{12}\right)ab + \frac{1}{3}b^2 =$$

$$= \boxed{\frac{1}{3}b^2}$$

$$\left\{\left[\left(\tfrac{1}{2}x+y\right)\cdot\left(\tfrac{y}{3}-x\right)\cdot 2+\tfrac{4}{3}xy\right]\cdot\left(\tfrac{2}{3}y^2+x^2\right)+\left(\tfrac{5}{9}y^4+x^4+\tfrac{1}{3}x^3y\right)\right\}$$

$$=\left\{\left[\left(\tfrac{1}{6}xy-\tfrac{1}{2}x^2+\tfrac{1}{3}y^2-xy\right)\cdot 2+\tfrac{4}{3}xy\right]\cdot\left(\tfrac{2}{3}y^2+x^2\right)+\left(\tfrac{5}{9}y^4+x^4+\tfrac{1}{3}x^3y\right)\right\}\div(-2y)^3$$

$$=\left\{\left[\tfrac{2}{6}xy-\tfrac{2}{2}x^2+\tfrac{2}{3}y^2-2xy+\tfrac{4}{3}xy\right]\cdot\left(\tfrac{2}{3}y^2+x^2\right)+\tfrac{5}{9}y^4+x^4+\tfrac{1}{3}x^3y\right\}\div(-2y)^3$$

$$=\left\{\left[\left(\tfrac{1}{3}-2+\tfrac{4}{3}\right)xy-x^2+\tfrac{2}{3}y^2\right]\cdot\left(\tfrac{2}{3}y^2+x^2\right)+\tfrac{5}{9}y^4+x^4+\tfrac{1}{3}x^3y\right\}\div$$

$$=\left\{\left[\left(\tfrac{-6+4}{3}\right)xy-x^2+\tfrac{2}{3}y^2\right]\cdot\left(\tfrac{2}{3}y^2+x^2\right)+\tfrac{5}{9}y^4+x^4+\tfrac{1}{3}x^3y\right\}\div$$

$$= \left\{ \left[-\frac{1}{3}xy - x^2 + \frac{2}{3}y^2 \right] \left(\frac{2}{3}y^2 + x^2 \right) + \frac{5}{9}y^4 + x^4 + \frac{1}{3}x^3y \right] : (-2y^3)$$

$$= \left\{ \left[-\frac{2}{9}xy^3 - \frac{1}{3}x^3y - \frac{2}{3}xy^2 - x^4 + \frac{4}{9}y^4 + \frac{2}{3}x^2y + \frac{5}{9}y^4 + x^4 + \frac{1}{3}x^3y \right] : (-2y^3) \right.$$

$$= \left\{ -\frac{2}{9}xy^3 + y^4 \right\} : (-2y^3) =$$

$$= \frac{2}{9} \cdot \frac{1}{2}x + \frac{1}{2}y = \boxed{\frac{1}{9}x - \frac{1}{2}y}$$

$$\frac{2}{7\!\!/_1} \cdot 8 \cdot 2 = 4 \qquad \frac{4}{7\!\!/_1} \cdot 8 \cdot 2 = 8$$

$$\left\{ \left[\left(x+\tfrac{1}{2}y\right)\left(b+\tfrac{2}{3}a\right) - bx - \tfrac{1}{3}ay\right]\left(ax-2by\right)6 + 5by\left(ax+by\right)\right\} : \left(-\tfrac{1}{2}\right)^2 =$$

$$= \left\{ \left[bx + \tfrac{2}{3}ax + \tfrac{1}{2}by + \tfrac{1}{3}ay - bx - \tfrac{1}{3}ay\right]\left(ax-2by\right)\cdot 6 + 5abxy + 5b^2y^2\right\} : \left(-\tfrac{1}{2}\right)^2 =$$

$$= \left\{ \left(\tfrac{2}{3}ax + \tfrac{1}{2}by\right)\left(ax-2by\right)\cdot 6 + 5abxy + 5b^2y^2\right\} : \tfrac{1}{4} =$$

$$= \left\{ \left(\tfrac{2}{3}a^2x^2 - \tfrac{4}{3}abxy + \tfrac{1}{2}abxy - b^2y^2\right)\cdot 6 + 5abxy + 5b^2y^2\right\} : \tfrac{1}{4} =$$

$$= \left\{ 4a^2x^2 - 8abxy + 3abxy - 6b^2y^2 + 5abxy + 5b^2y^2\right\} : \tfrac{1}{4} =$$

$$= \left\{ 4a^2x^2 - b^2y^2\right\} : \tfrac{1}{4} =$$

$$= \left\{ 4a^2x^2 - b^2y^2\right\} \cdot \tfrac{4}{1} =$$

$$= \boxed{16a^2x^2 - 4b^2y^2}$$

$$2\left(a^3+\frac{1}{4}\right)\left(\frac{1}{16}-a^3\right)+\left[\left(a-\frac{1}{2}\right)\left(a^4+\frac{1}{2}a^3+\frac{1}{4}a^2\right)\cdot\left(a^2+\frac{1}{8}\right)\right]:\left(\frac{1}{2}a^2\right)$$

$$=\left(2a^3+\frac{1}{2}\right)\left(\frac{1}{16}-a^3\right)+\left[\left(a^5+\frac{1}{2}a^4+\frac{1}{4}a^3-\frac{1}{2}a^4-\frac{1}{4}a^3-\frac{1}{8}a^2\right)\left(a^3+\frac{1}{8}\right)\right]:\left(\frac{1}{2}a^2\right)=$$

$$=\left(\frac{1}{8}a^3-2a^6+\frac{1}{32}-\frac{1}{2}a^3\right)+\left[\left(a^5-\frac{1}{8}a^2\right)\left(a^3+\frac{1}{8}\right)\right]:\left(\frac{1}{2}a^2\right)=$$

$$=\frac{1}{8}a^3-2a^6+\frac{1}{32}-\frac{1}{2}a^3+\left[a^8+\frac{1}{8}a^5-\frac{1}{8}a^5-\frac{1}{64}a^2\right]:\left(\frac{1}{2}a^2\right)=$$

$$=\frac{1}{8}a^3-2a^6+\frac{1}{32}-\frac{1}{2}a^3+\left[a^8-\frac{1}{64}a^2\right]:\frac{1}{2}a^2=\boxed{-\frac{3}{8}a^2}$$

$$=\frac{1}{8}a^3-2a^6+\frac{1}{32}-\frac{1}{2}a^3+2a^6-\frac{1}{32}=\left(\frac{1}{8}-\frac{1}{2}\right)a^3=\left(\frac{1-4}{8}\right)a^3$$