

① a)  $P(x) = 2x^4 + 3x^2 + x - 1$      $Q(x) = 3x^4 - 2x^3 + 3x^2 + 4$      $R(x) = x^2 - 2x + 1$

a)  $3P(x) - 2Q(x) =$

$$3(2x^4 + 3x^2 + x - 1) - 2(3x^4 - 2x^3 + 3x^2 + 4) =$$

$$\cancel{6x^4} + 9x^2 + 3x - 3 - \cancel{6x^4} + 4x^3 - 6x^2 - 8 =$$

$$\boxed{4x^3 + 3x^2 + 3x - 11}$$

b)  $P(x) \cdot R(x) =$

$$(2x^4 + 3x^2 + x - 1)(x^2 - 2x + 1) =$$

$$2x^6 - 4x^5 + 2x^4 + 3x^4 - 6x^3 + 3x^2 + x^3 - 2x^2 + x - x^2 + 2x - 1 =$$

$$\boxed{2x^6 - 4x^5 + 5x^4 - 5x^3 + 3x^2 + 3x - 1}$$

②

$$\left(2 - \frac{5}{2}\right)^2 - \frac{11}{24} \div \left[1 - \left(\frac{11}{2} - 1\right) \div \left(\frac{3}{4} + \sqrt{\frac{1}{16}}\right)\right] =$$

$$\left(\frac{4-5}{2}\right)^2 - \frac{11}{24} \div \left[1 - \left(\frac{11-2}{2}\right) \div \left(\frac{3}{4} + \frac{1}{4}\right)\right] =$$

$$\left(\frac{-1}{2}\right)^2 - \frac{11}{24} \div \left[1 - \left(\frac{9}{2}\right) \div (1)\right] =$$

$$\frac{1}{4} - \frac{11}{24} \div \left[\frac{2-9}{2}\right] =$$

$$\frac{1}{4} - \frac{11}{24} \div \frac{-7}{2} =$$

$$\frac{1}{4} + \frac{2 \cdot 11}{7 \cdot 24} = \frac{1}{4} + \frac{11}{7 \cdot 12} = \frac{2 \cdot 1 + 11}{7 \cdot 12} = \frac{32}{7 \cdot 12} = \frac{8}{21} //$$