

1.

(1) $a^3 \times a^5 = a^{3+5} = a^8$

(2 点)

(2) $(a^3)^4 = a^{3 \times 4} = a^{12}$

(2 点)

(3) $a^7 \div a^3 \times a = a^{7-3+1} = a^5$

(2 点)

(4) $(a^3b)^2 \div a^3 = (a^3)^2 \times b^2 \div a^3 = a^6b^2 \div a^3 = a^{6-3}b^2 = a^3b^2$

(2 点)

2.

(1) $3^{-7} \times 3^5 = 3^{(-7)+5} = 3^{-2} = \frac{1}{9}$

(3 点)

(2) $5^{-4} \div 5^{-6} = 5^{(-4)-(-6)} = 5^2 = 25$

(3 点)

(3) $(a^3b^{-4})^{-2} = (a^3)^{-2} \times (b^{-4})^{-2} = a^{3 \times (-2)} \times b^{(-4) \times (-2)} = a^{-6}b^8 = \frac{b^8}{a^6}$

(3 点)

(4) $(3a)^2 \div a^{-3} \times a^{-4} = 9a^2 \div a^{-3} \times a^{-4} = 9a^{2-(-3)+(-4)} = 9a$

(3 点)