a/ $\det(2A^{-1}) = 2^4 \cdot \frac{1}{\det A} = 16 \cdot \frac{1}{-4} = -4$

b/ $|A \cdot A^T| = |A| \cdot |A^T| = |A|^2 = 16$

c/ $|\text{adj}A| = |\det A \cdot A^{-1}|$

$= \det A \cdot \det A^{-1}$

$= \det A^4 \cdot \frac{1}{\det A} = \det A^3 = (-4)^3$

$= -64$

d/ $|-A^3| = |-1 \cdot A^3| = (-1)^4 \cdot \det A^3$

$= 1 \cdot (-4)^3 = -64$

e/ $|(2A)^{-1}|$

$= \frac{1}{\det(2A)} = \frac{1}{2^4 \cdot \det A} = \frac{1}{16 \cdot -4} = \frac{1}{-64}$

f/ $\det(A^{-1} - 2\,\text{adj}\,A)$

$= \det\left(\frac{1}{\det A} \cdot \text{adj}\,A - 2(\text{adj}\,A)\right)$

$= \det\left(\left(\frac{1}{\det A} - 2\right)(\text{adj}\,A)\right)$

$= \det\left(\frac{1}{-4} - 2\right)^4 \cdot -64 = \frac{-6561}{4}$