

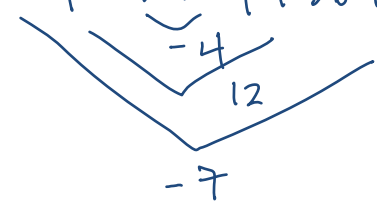
## Solutions for practice in 5. 4 Determinants

1. Compute these if possible.

a.  $\begin{vmatrix} 0 & -2 & 1 \\ 3 & 0 & 4 \end{vmatrix} = \text{Not possible}$

b.  $\begin{vmatrix} 3 & 2 \\ -1 & 5 \end{vmatrix} = 3 \cdot 5 - 2 \cdot (-1) = 15 + 2 = 17$

c.  $\begin{vmatrix} 1 & 2 & 2 \\ 3 & 7 & 9 \\ -1 & -4 & -7 \end{vmatrix} = 1 \cdot 7 \cdot (-7) + 3 \cdot (-4) \cdot 2 + (-1) \cdot 2 \cdot 9 -$   
 $1 \cdot 2 \cdot 2 - 2 \cdot 7 \cdot (-1) - 9 \cdot (-4) \cdot 1 - (-7) \cdot 2 \cdot 3 =$   
 $3 \quad 7 \quad 9 \quad = -49 - 24 - 18 + 14 + 36 + 42 = 1$



2. Solve for x:  $\begin{vmatrix} 2x-1 & 2 \\ 3 & x+2 \end{vmatrix} = 7$

$$(2x-1)(x+2) - 6 = 7$$

$$2x^2 + 4x - x - 2 - 6 = 7$$

$$2x^2 + 3x - 15 = 0$$

$$x_{1,2} = \frac{-3 \pm \sqrt{9 + 8 \cdot 15}}{4} = \frac{-3 \pm \sqrt{129}}{4}$$