

Workbook

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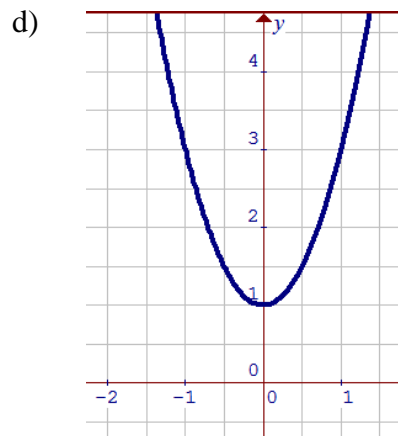
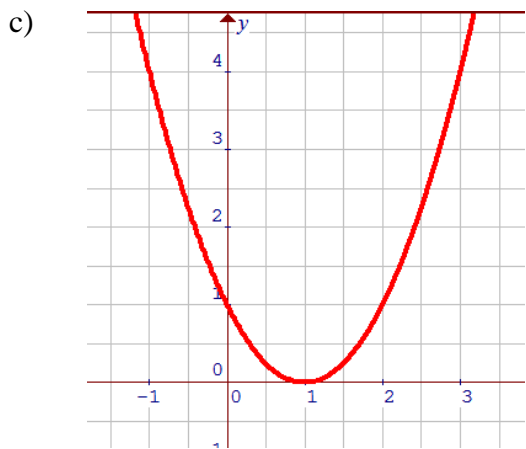
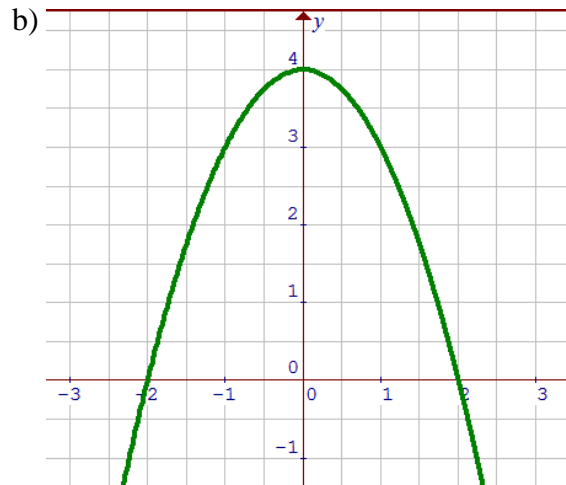
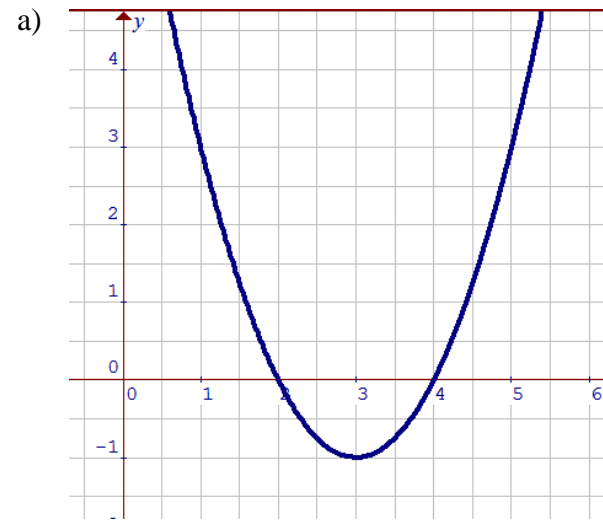
#1

a) $V(-2, -6); x = -2$ b) $V(1, -3); x = 1$

c) $V\left(\frac{3}{4}, \frac{-9}{8}\right); x = \frac{3}{4}$ d) $V(0, 6); x = 0$

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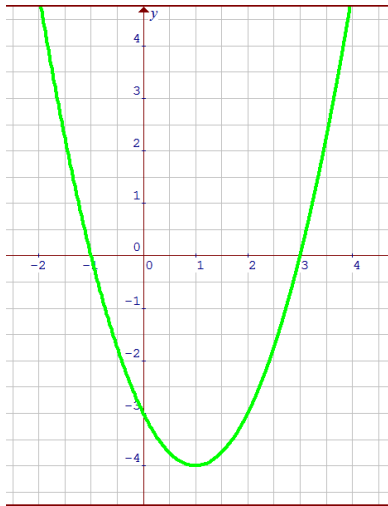
#2



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#3

a)



b)

1. $\text{dom } f = \mathbb{R}$
2. $\text{ran } f = [-4, +\infty[$
3. zero of f : -1 and 3
4. y -intercept of f : -3
5. $f(x) \geq 0, \forall x \in]-\infty, -1] \cup [3, +\infty[$
 $f(x) \leq 0, \forall x \in [-1, 3]$
6. $f \uparrow$ over $]1, +\infty[$; $f \downarrow$ over $] -\infty, 1]$
7. $\min f = -4$

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#4

- a) $f(x) \geq 0, \forall x \in]-\infty, -5] \cup [3, +\infty[$; $f(x) \leq 0, \forall x \in [-5, 3]$
- b) $f(x) \geq 0, \forall x \in [\frac{3}{2}, 2]$; $f(x) \leq 0, \forall x \in]-\infty, \frac{3}{2}] \cup [2, +\infty[$
- c) $f(x) \geq 0, \forall x \in \mathbb{R}$
- d) $f(x) \leq 0, \forall x \in \mathbb{R}$

#5

- a) $\text{dom } f = \mathbb{R}; \text{ran } f =]-\infty, 9]$
- b) $\text{dom } f = \mathbb{R}; \text{ran } f =]-16, +\infty[$

#6

- a) $f \uparrow$ over $] \frac{1}{2}, +\infty[$ and $f \downarrow$ over $] -\infty, \frac{1}{2}]$
- b) $f \uparrow$ over $] -\infty, \frac{3}{4}]$ and $f \downarrow$ over $[\frac{3}{4}, +\infty[$

#7 zero of f : $\frac{2}{3}$ and 3 #8 $f(x) \geq 0, \forall x \in]-\infty, -7] \cup [2, +\infty[$ #9 $\text{ran } f =]-\infty, 16]$ #10 y -intercept of f : 5 #11 $\max f = 4$ #12 The line with equation $x = \frac{5}{4}$ #13 $f \downarrow \forall x \in]-\infty, \frac{1}{4}]$