

**COMPITO 1**

1.  $4(\sqrt{2} - 1)$
  2.  $y(x) = c_1 + c_2e^{-x} + 2x^3 - 6x^2 + 12x$
  3.  $-7\sqrt{2}$ .
  4.  $(0, 0)$  punto di sella.
  5.  $m = 0$  in  $(3, 0)$  e in  $(3, \frac{\sqrt{3}}{3})$   $M = \pi$  in  $(6, 2\frac{\sqrt{3}}{3})$
  6.  $\alpha = 5$
  7.  $\frac{2}{3}(50^{3/2} - 1)$
  8.  $\frac{3}{16}$
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**COMPITO 2**

1.  $6(\sqrt{2} - 1)$
  2.  $y(x) = c_1 + c_2e^{-x} + 3x^3 - 9x^2 + 18x$
  3.  $-6\sqrt{2}$ .
  4.  $(0, 0)$  punto di sella.
  5.  $m = 0$  in  $(6, 0)$  e in  $(6, \frac{\sqrt{3}}{3})$   $M = 2\pi$  in  $(12, 2\frac{\sqrt{3}}{3})$
  6.  $\alpha = 7$
  7.  $\frac{2}{3}(37^{3/2} - 1)$
  8.  $\frac{15}{16}$
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**COMPITO 3**

1.  $8(\sqrt{2} - 1)$
2.  $y(x) = c_1 + c_2e^{-x} + 4x^3 - 12x^2 + 24x$
3.  $-5\sqrt{2}$ .
4.  $(0, 0)$  punto di sella.
5.  $m = 0$  in  $(9, 0)$  e in  $(9, \frac{\sqrt{3}}{3})$   $M = 3\pi$  in  $(18, 2\frac{\sqrt{3}}{3})$
6.  $\alpha = 9$
7.  $\frac{2}{3}(26^{3/2} - 1)$
8.  $\frac{35}{16}$

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**COMPITO 4**

1.  $10(\sqrt{2} - 1)$
2.  $y(x) = c_1 + c_2e^{-x} + 5x^3 - 15x^2 + 30x$
3.  $-4\sqrt{2}$ .
4.  $(0, 0)$  punto di sella.
5.  $m = 0$  in  $(12, 0)$  e in  $(12, \frac{\sqrt{3}}{3})$   $M = 4\pi$  in  $(24, 2\frac{\sqrt{3}}{3})$
6.  $\alpha = 11$
7.  $\frac{2}{3}(17^{3/2} - 1)$
8.  $\frac{63}{16}$

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**COMPITO 5**

1.  $12(\sqrt{2} - 1)$
2.  $y(x) = c_1 + c_2e^{-x} + 6x^3 - 18x^2 + 36x$
3.  $-3\sqrt{2}$ .
4.  $(0, 0)$  punto di sella.
5.  $m = 0$  in  $(15, 0)$  e in  $(15, \frac{\sqrt{3}}{3})$   $M = 5\pi$  in  $(30, 2\frac{\sqrt{3}}{3})$
6.  $\alpha = 13$
7.  $\frac{2}{3}(10^{3/2} - 1)$
8.  $\frac{99}{16}$

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**COMPITO 6**

1.  $14(\sqrt{2} - 1)$
  2.  $y(x) = c_1 + c_2e^{-x} + 7x^3 - 21x^2 + 42x$
  3.  $-2\sqrt{2}$ .
  4.  $(0, 0)$  punto di sella.
  5.  $m = 0$  in  $(18, 0)$  e in  $(18, \frac{\sqrt{3}}{3})$   $M = 6\pi$  in  $(36, 2\frac{\sqrt{3}}{3})$
  6.  $\alpha = 15$
  7.  $\frac{2}{3}(5^{3/2} - 1)$
  8.  $\frac{143}{16}$
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