

COMPITO 1

1. $F(x) = 2 \ln(\sin x + 2) - \ln(\sin x + 1) + c$
 2. $y(x) = \frac{3}{2}(\sin x - \frac{1}{2}) + \frac{3}{4}e^{-2 \sin x}$
 3. $g'(0) = -1$ per ogni $\alpha > 0$.
 4. $(0, 0)$ punto di sella.
 5. $m = 0$ in tutto AC e $M = \frac{e^3}{3}$ in $(\frac{1}{3}, \frac{4}{3})$.
 6. $y = \frac{3}{2}x$.
 7. $\sinh^2 2$
 8. $I = \frac{1}{2}$
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COMPITO 2

1. $F(x) = \frac{4}{3} \ln(\sin x + 4) - \frac{1}{3} \ln(\sin x + 1) + c$
 2. $y(x) = \frac{4}{3}(\sin x - \frac{1}{3}) + \frac{4}{9}e^{-3 \sin x}$
 3. $g'(0) = -1$ per ogni $\alpha > 0$.
 4. $(0, 0)$ punto di sella.
 5. $m = 0$ in tutto AC e $M = \frac{e^5}{5}$ in $(\frac{1}{5}, \frac{8}{5})$.
 6. $y = \frac{5}{2}x$.
 7. $\sinh^2 3$
 8. $I = \frac{3}{2}$
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COMPITO 3

1. $F(x) = \frac{6}{5} \ln(\sin x + 6) - \frac{1}{5} \ln(\sin x + 1) + c$
 2. $y(x) = \frac{5}{4}(\sin x - \frac{1}{4}) + \frac{5}{16}e^{-4 \sin x}$
 3. $g'(0) = -1$ per ogni $\alpha > 0$.
 4. $(0, 0)$ punto di sella.
 5. $m = 0$ in tutto AC e $M = \frac{e^7}{7}$ in $(\frac{1}{7}, \frac{12}{7})$.
 6. $y = \frac{7}{2}x$.
 7. $\sinh^2 4$
 8. $I = \frac{5}{2}$
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COMPITO 4

1. $F(x) = \frac{8}{7} \ln(\sin x + 8) - \frac{1}{7} \ln(\sin x + 1) + c$
 2. $y(x) = \frac{6}{5}(\sin x - \frac{1}{5}) + \frac{6}{25}e^{-5 \sin x}$
 3. $g'(0) = -1$ per ogni $\alpha > 0$.
 4. $(0, 0)$ punto di sella.
 5. $m = 0$ in tutto AC e $M = \frac{e^9}{9}$ in $(\frac{1}{9}, \frac{16}{9})$.
 6. $y = \frac{9}{2}x$.
 7. $\sinh^2 5$
 8. $I = \frac{7}{2}$
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COMPITO 5

1. $F(x) = \frac{10}{9} \ln(\sin x + 10) - \frac{1}{9} \ln(\sin x + 1) + c$
 2. $y(x) = \frac{7}{6}(\sin x - \frac{1}{6}) + \frac{7}{36}e^{-6 \sin x}$
 3. $g'(0) = -1$ per ogni $\alpha > 0$.
 4. $(0, 0)$ punto di sella.
 5. $m = 0$ in tutto AC e $M = \frac{e^{11}}{11}$ in $(\frac{1}{11}, \frac{20}{11})$.
 6. $y = \frac{11}{2}x$.
 7. $\sinh^2 6$
 8. $I = \frac{9}{2}$
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COMPITO 6

1. $F(x) = \frac{12}{11} \ln(\sin x + 12) - \frac{1}{11} \ln(\sin x + 1) + c$
 2. $y(x) = \frac{8}{7}(\sin x - \frac{1}{7}) + \frac{8}{49}e^{-7 \sin x}$
 3. $g'(0) = -1$ per ogni $\alpha > 0$.
 4. $(0, 0)$ punto di sella.
 5. $m = 0$ in tutto AC e $M = \frac{e^{13}}{13}$ in $(\frac{1}{13}, \frac{24}{13})$.
 6. $y = \frac{13}{2}x$.
 7. $\sinh^2 7$
 8. $I = \frac{11}{2}$
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