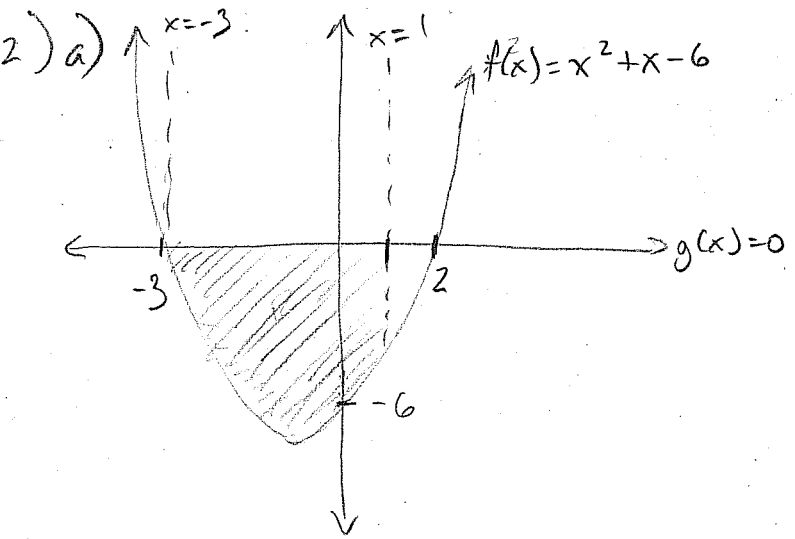
PRACTICE PROBLEMS 2
ANSWERS

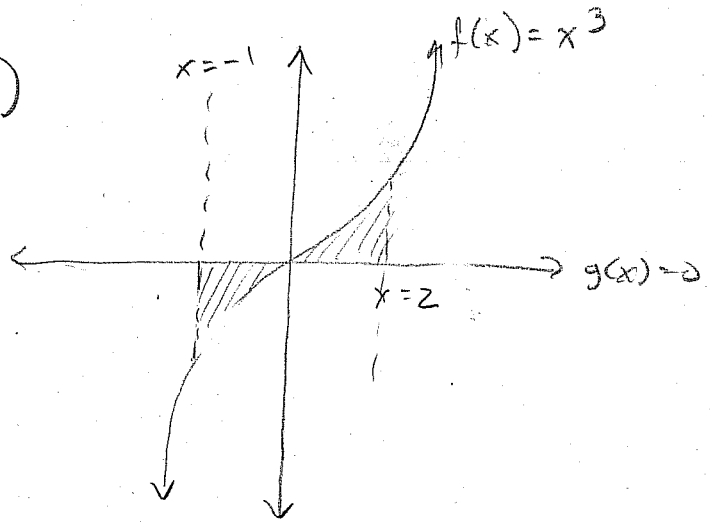
1) a) 0 b) 4 c) $e^4 - 1$

2) a)



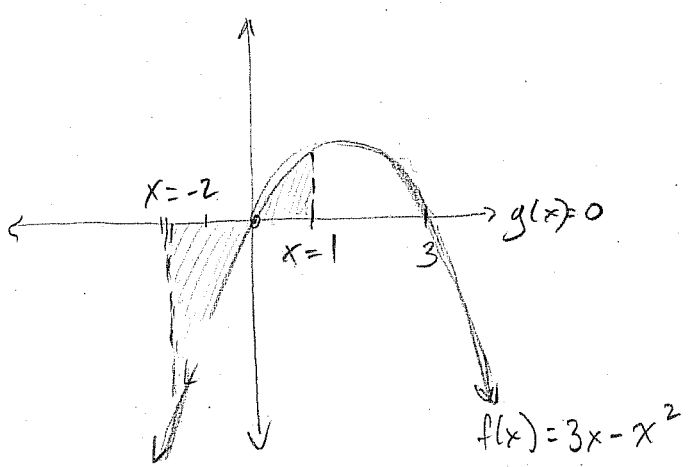
AREA = $\frac{56}{3}$ units²

b)



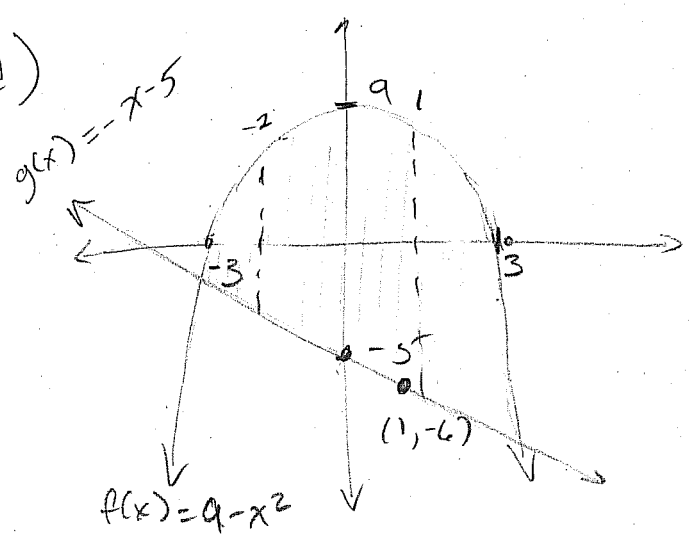
AREA = $\frac{17}{4}$ units²

c)



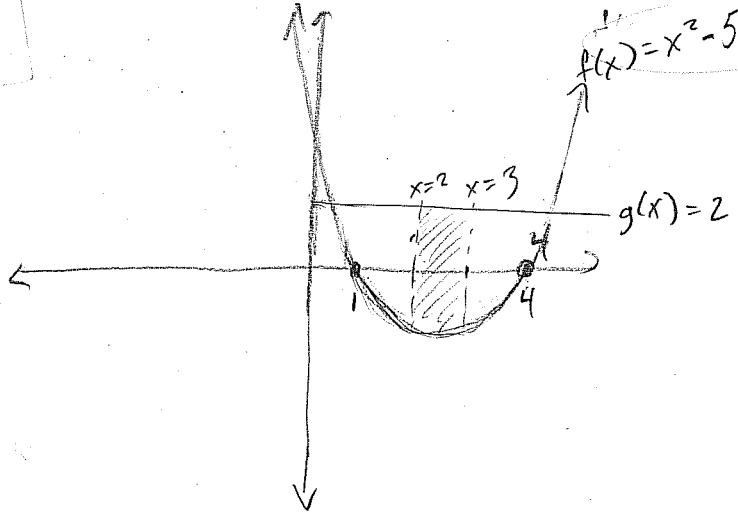
AREA = $\frac{59}{6}$ units²

d)

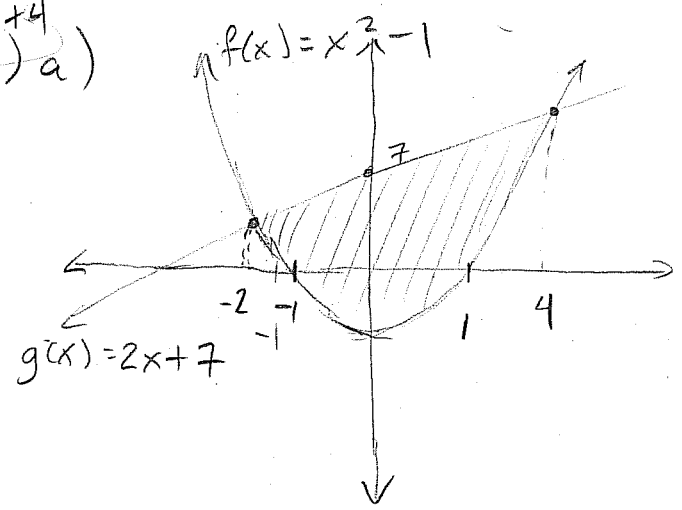


AREA = $\frac{81}{2}$ units²

3) a)

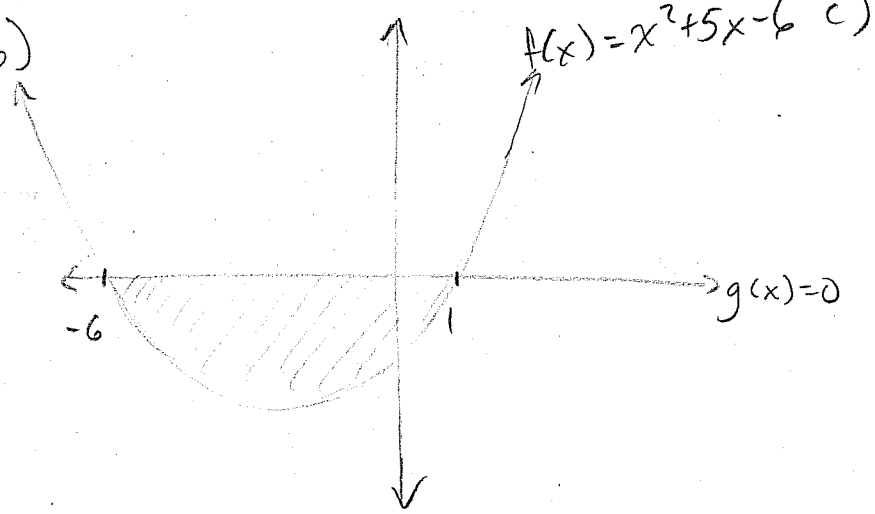


AREA = $\frac{25}{6}$ units²



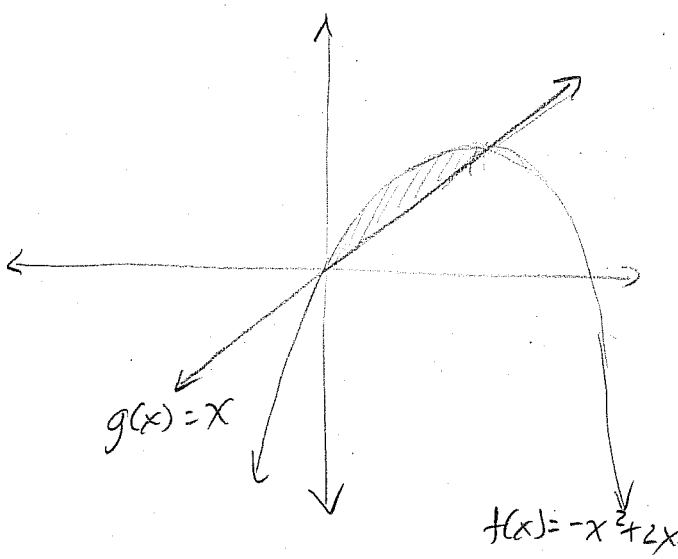
AREA = 36 units²

b)



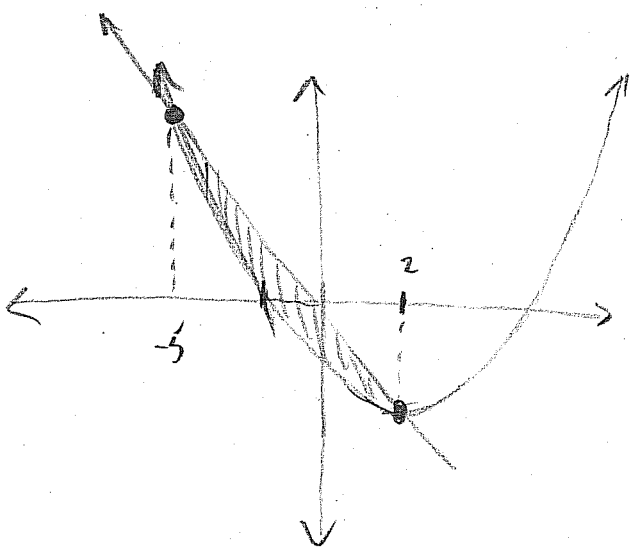
AREA = $\frac{343}{6}$ units²

c)



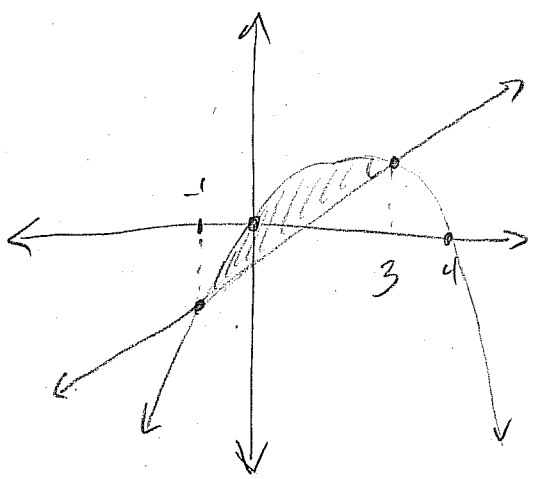
AREA = $\frac{1}{6}$ units²

d)



AREA = 120 units²

e)



AREA = $\frac{32}{3}$ units²

4) 1) $\bar{x} = 10$, CS $\approx \$11.667$ 2) $\bar{x} = 10$ CS $\approx \$16\,667$

3) $\bar{x} = 25$, CS $\approx \$6\,667$ 4) $\bar{x} = 25$, PS $\approx \$3500$

5) $\bar{x} = 10$, $\bar{p} = 5$, PS $\approx \$11\,667$

6) $\bar{x} = 8$, $\bar{p} = 80$, CS $\approx \$41.333$, PS $\approx \$170\,667$

7) $\bar{x} = 10$, $\bar{p} = 60$, CS $\approx \$13\,333$, PS $\approx \$11\,667$

5 a) $-\frac{x}{2}e^{-2x} - \frac{1}{4}e^{-2x} + C$ b) $\frac{7}{4}xe^{4x} - \frac{7}{16}e^{4x} + C$

c) $\frac{1}{2}e^{2x} + \frac{4}{3}x^3 - 4xe^x + 4e^x + C$ d) $\frac{x-5}{4}e^{4x} - \frac{1}{16}e^{4x} + C$

e) $x^2 \ln x^3 - \frac{3}{2}x^2 + C$ f) $\frac{2}{5}x^{5/2}\ln\sqrt{x} - \frac{2}{25}x^{5/2} + C$

g) $2\sqrt{x}\ln x - 4\sqrt{x} + C$ h) $\frac{x\sin(\ln x) - x\cos(\ln x)}{2} + C$

i) $e^x \sin x + e^x \cos x + C$ j) $-3e^{-3} - e^{-3}$

k) $2\ln 2 - \frac{3}{4}$ l) $3\ln 3 - 2$

7) e) HAS BEEN CHANGED