

MAT 126 Fall 2020, Quiz 4

Name	ID	Section
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**THIS QUIZ IS WORTH 10 POINTS.  
NO BOOKS, NOTES OR CALCULATORS ARE ALLOWED.**

**Write the correct answer in the box.**

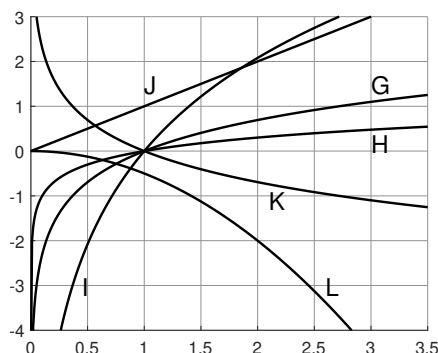
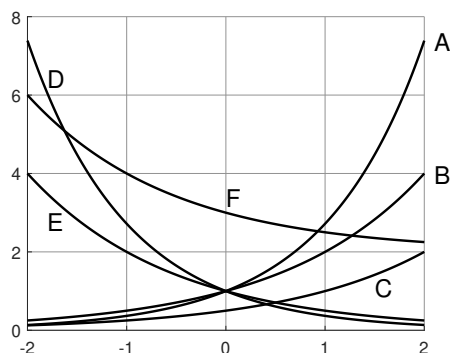
Match the formula to the correct graph below.

(1)   $e^x$

(3)   $\ln x$

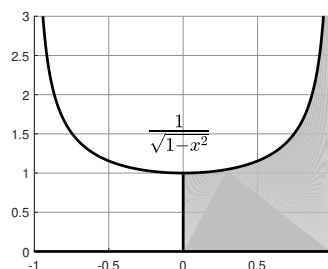
(2)   $2 + 2^{-x}$

(4)   $\ln \frac{1}{x}$



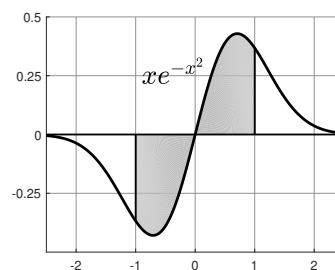
(5)  Compute the area of the shaded region on the right.

- |              |              |
|--------------|--------------|
| (a) $\pi/6$  | (f) $3\pi/4$ |
| (b) $\pi/4$  | (g) $\pi$    |
| (c) $\pi/3$  | (h) $3\pi/2$ |
| (d) $\pi/2$  | (i) $4\pi/3$ |
| (e) $2\pi/3$ | (j) $2\pi$   |



(6)  Compute the total area of the shaded region on the right (all regions count as positive area).

- |                               |                                    |
|-------------------------------|------------------------------------|
| (a) 0                         | (h) $\frac{1}{2}(1 - e^{-4})$      |
| (b) $1/2$                     | (i) $2(1 - e^{-1})$                |
| (c) 1                         | (j) $2(1 - e^{-4})$                |
| (d) 2                         | (k) $\frac{1}{2}(e^{-1} - e^{-4})$ |
| (e) $1 - e^{-1}$              | (l) $e^{-1} - e^{-4}$              |
| (f) $1 - e^{-4}$              | (m) $2(e^{-1} - e^{-4})$           |
| (g) $\frac{1}{2}(1 - e^{-1})$ | (n) none of these                  |

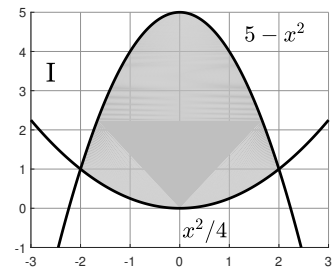
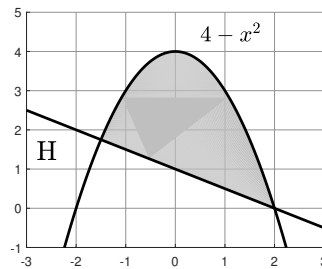
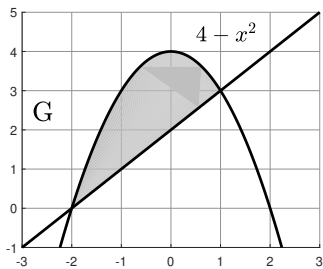
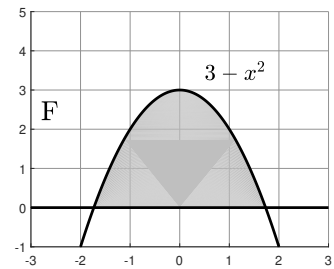
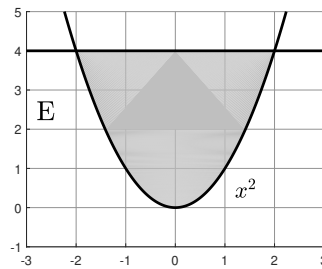
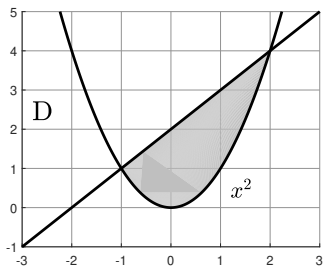
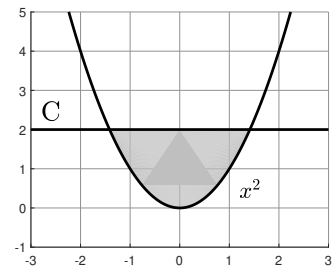
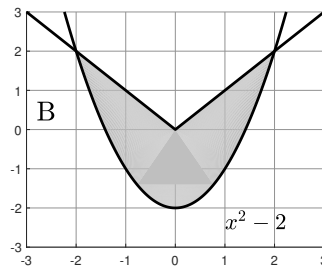
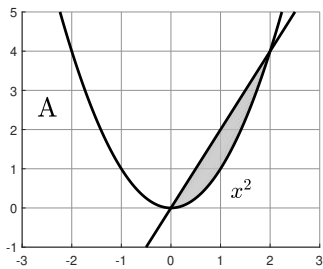


(7)  Find the indefinite integral of  $\int \frac{dx}{x+x \ln^2(x)}$ .

- (a)  $\tan^{-1}(\ln x) + C$     (d)  $\sin^{-1}(x) + C$     (g)  $\cot^{-1}(\ln x) + C$   
 (b)  $\tan^{-1}(x) + C$     (e)  $\cos^{-1}(\ln x) + C$     (h)  $\sec^{-1}(x) + C$   
 (c)  $\sin^{-1}(\ln x) + C$     (f)  $\sec^{-1}(x) + C$     (i) none of the above

Match each formula for the area to the region it describes.

(8)   $\int_{-\sqrt{3}}^{\sqrt{3}} 3 - x^2 dx$     (9)   $\int_{-1}^2 2 + x - x^2 dx$     (10)   $\int_0^2 2x - x^2 dx$



Answers: 1A, 2F, 3G, 4K, 5D, 6E, 7A, 8F, 9D, 10A