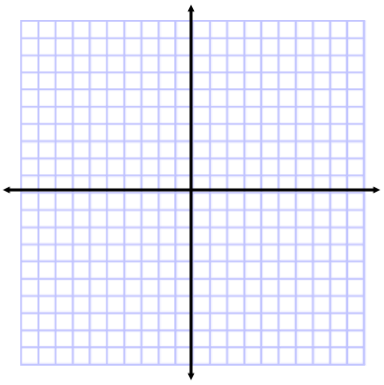
Midterm 3
Practice Test

Graph1-8. State: Domain, Range, x-intercept(s), and y intercept

1) f(x)= $e^x - 2$

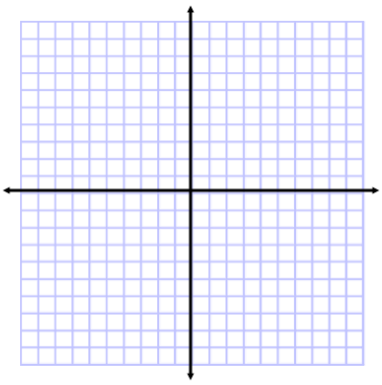


x int(s)_____

y int._____

D=_____R=_____

2) g(x)= $\ln(x-1)$

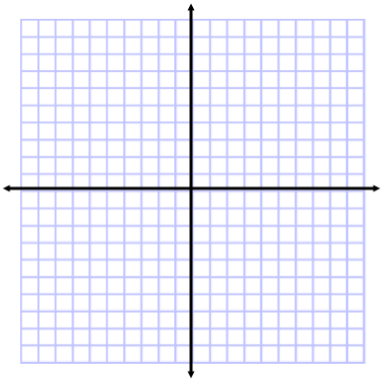


x int(s)_____

y int._____

D=_____R=_____

3) f(x)= $e^{x-2}+1$

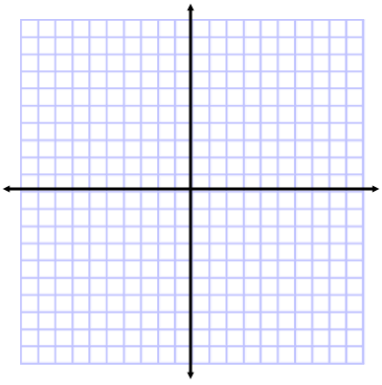


x int(s)_____

y int._____

D=_____R=_____

4) m(x)= $\ln(x+1)-2$

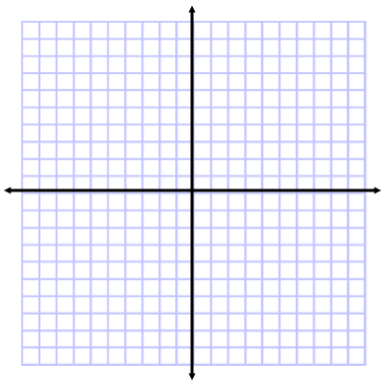


x int(s)_____

y int._____

D=_____R=_____

5) f(x)= $-e^{x+2}+3$

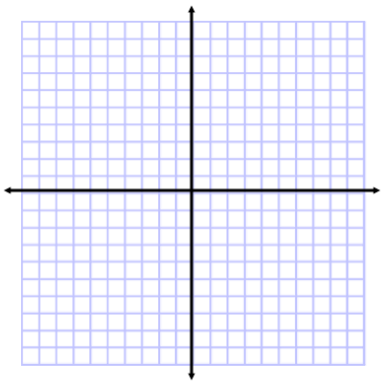


x int(s)_____

y int._____

D=_____R=_____

6) g(x)= $-\ln(x-3)+1$

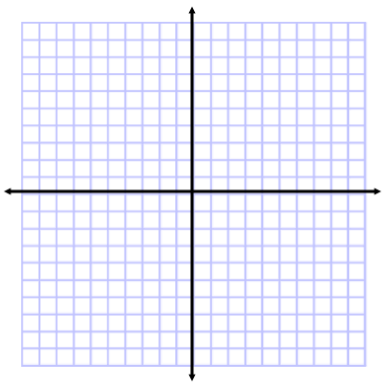


x int(s)_____

y int._____

D=_____R=_____

7) f(x)= $e^{2-x}+1$

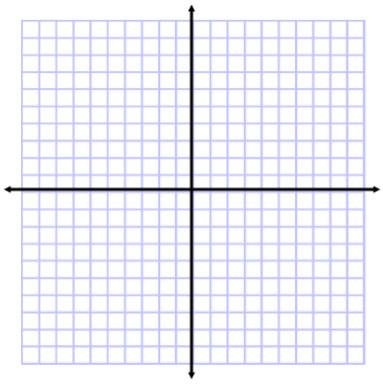


x int(s)_____

y int._____

D=_____R=_____

8) m(x)= $\ln(2-x)+1$



x int(s)_____

y int._____

D=_____R=_____

Simplify each:

9) $\log_3 \frac{1}{81}$

10) $\log_2 \sqrt[3]{4}$

11) $\log_{16} \frac{1}{8}$

12) $\log_4 1$

13) $\log_{10} 10{,}000$

14) $\log_e e^3$

15) $\log_{\frac{1}{2}} 32$

Approximate each; state the integers between which each expression lays.

16) $\log_2 20$

17) $\log_3 100$

17.5) $\log_{(1/3)} 30$

Solve each:

18) $\log_2 x - \log_2(x-1) = 3$

19) $4e^{x-2} - 7 = 2$

20) $(2^{2x+3}) = 5(2^{x-2})$

21) $e^{2x} = \dfrac{e^3}{e^{x-1}}$

22) $\log_6(x-1) + \log_6(x+2) = \log_6(x^2+2)$

23) $\log_2(x-2) + \log_2(x+1) = 3$

24) $3(2^{x+2}) = 2^{3x-1}$

25) $12 = 3e^{x+2} + 5$

26) $\log_{10}(x-1)^{-2} = -4$

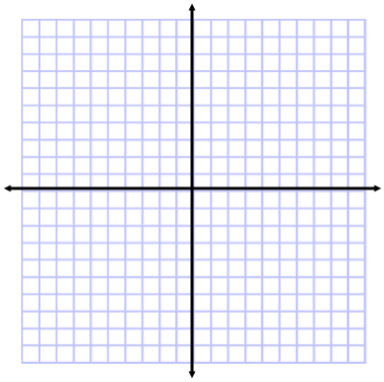
27) $|3x-4| < 8$

28) $|2x+3|-5 \geq 2$

29) $|3x+1|-5 < -2$

30) Graph

$$f(x)=\begin{cases} |x| & x \in (-\infty, -1) \\ x^2 & x \in [-1, 2] \\ 3-x & x \in (2, \infty) \end{cases}$$



For f(x) above, find:

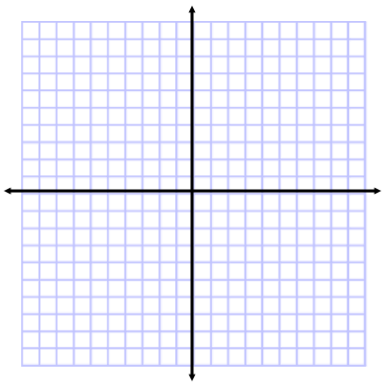
f(-2)=_____

f(0)=_____

f(2)=_____

31) Graph

$$f(x)=\begin{cases} 3 & x\in(-\infty,0] \\ \log_3 x & x\in(0,3] \\ 2^x & x\in(3,\infty) \end{cases}$$



find:

f(-1)=_____

f(0)=_____

f(3)=_____

Solve the following systems

32)

$x + y = 5$

$x - y = 3$

33)

$2x - 3y = 12$

$y = x - 10$

34)

$8x + 7y = 38$

$3x - 5y = -1$

35)

$3x + 2y - z = 4$

$2x - 3x + z = -1$

$x + y + z = 6$

Given the following matrices:

$A=\begin{pmatrix} 1 & 2 \end{pmatrix}$ $B=\begin{pmatrix} -2 & 0 & 1 \end{pmatrix}$ $C=\begin{pmatrix} 1 & -1 \\ 2 & 0 \end{pmatrix}$ $D=\begin{pmatrix} -1 & 0 \\ 2 & 1 \end{pmatrix}$

$F=\begin{pmatrix} -1 & 0 \\ 2 & 1 \end{pmatrix}$ $G=\begin{pmatrix} 0 \\ 2 \end{pmatrix}$

36) AB

37) 3A + B

38) AC

39) DF

40) CG

41) D – C

42) C – D

43) 4C