Review Test One
Calculus AB

1. Name the domain and range. Use interval notation.
   a. $y=2\cos x$
   b. $y=\sqrt{x-3}$
   c. $y=\sqrt{36-x^2}$
   d. $y=\dfrac{1}{x-5}$
   e. $y=\dfrac{1}{\sqrt{x}}$

2. Solve each such that $0\le x<2\pi$.
   a. $\sec x=-\dfrac{2\sqrt{3}}{3}$
   b. $\cos x=\dfrac{-\sqrt{3}}{2}$
   c. $\sin x=-\dfrac{\sqrt{2}}{2}$
   d. Cotangent is undefined
   e. $\cos x=0$
   f. $\cot x=\sqrt{3}$
   g. secant is undefined.

3. Evaluate each.
   a. $\sin\dfrac{5\pi}{4}$
   b. $\csc 0$
   c. $\sec\dfrac{3\pi}{2}$
   d. $\cot\dfrac{5\pi}{3}$
   e. $\tan\dfrac{11\pi}{6}$
   f. $\cos\dfrac{5\pi}{6}$

4. Change radian measures to degrees and degrees to radians.
   a. 8°
   b. 260°
   c. $\dfrac{7\pi}{4}$
   d. $\dfrac{13\pi}{9}$

5. Solve each such that $0\le x<2\pi$.
   a. $\sin x=\cos x$
   b. $4\cos^2 x-3=0$
   c. $2\tan x\cos x-\tan x=0$
   d. $\cot^2 x-1=0$
   e. $8\cos^2 x+14\cos x+5=0$
   f. $2\sin^2 x-3\sin x+1=0$
   g. $2\cos 3x=1$
   h. $2\cos x\tan x-2\cos x+\tan x-1=0$

6. Graph each.
   a. $y=-|x-2|+3$
   b. $y=-x^2(x+3)^3(x-4)^3$
   c. $y=x(x-4)(x+4)(x-3)^2$
   d. $y=-2\sin 4x+2$
   e. $y=(x-3)^3-2$
   f. $y=-2\csc(3x-\pi)+1$
   g. $y=\tan 2\left(x+\dfrac{\pi}{2}\right)+1$
   h. $y=-4\cot 2\left(x-\dfrac{\pi}{8}\right)-2$
   i. $y=\dfrac{1}{(x-2)^2}$
   j. $y=\dfrac{2x-3}{2x+6}$
   k. $y=\dfrac{1}{x-2}$

7. Solve each. Write your answer in interval notation where appropriate.
   a. $-3x-1>-2$
   b. $15x^2+24<38x$
   c. $x^2-3x\le 0$
   d. $3x^3+12x^2-5x-20\le 0$

8. If $f(x)=x^2-2$, $g(x)=2-4x$, $h(x)=3x-1$, find each.
   a. $\dfrac{f(x+h)-f(x)}{h}$
   b. $f(g(h(2)))$
   c. $g(h(a))$

9. the equation of the line that
   a. passes thru (5,-1) and (-2,9)
   b. is perpendicular to $4x-3y=2$ and passes thru (4,-2).

c. passes thru (-3,4) and (4,-1) in point slope form.
d. passes thru (-2, 50) and (-75, 50)

10. Find the x and y intercept of each
    a. $3x-4y=9$
    b. $y=\dfrac{2x-3}{5-3x}$
    c. $y=2x^3-3x^2-4x$

11. Find the intersection points of the system.

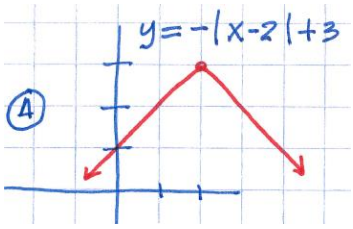
$$\begin{cases}3x-5y=-4\\2x+3y=1\end{cases}$$

Study your Quizzes and Homework.

Answers

1. –
    A. D: $(-\infty,\infty)$ R: $[-2,2]$
    B. D: $[3,\infty)$ R: $[0,\infty)$
    C. D: $[-6,6]$ R: $[0,6]$
    D. D: $(-\infty,5)\cup(5,\infty)$
    R: $(-\infty,0)\cup(0,\infty)$
    E. D: $(0,\infty)$ R: $(0,\infty)$
2. –
    A. $\frac{5\pi}{6},\frac{7\pi}{6}$
    B. $\frac{5\pi}{6},\frac{7\pi}{6}$
    C. $\frac{5\pi}{4},\frac{7\pi}{4}$
    D. $0,\pi$
    E. $\frac{\pi}{2},\frac{3\pi}{2}$
    F. $\frac{\pi}{6},\frac{7\pi}{6}$
    G. $\frac{\pi}{2},\frac{3\pi}{2}$
3. –
    A. $\frac{-\sqrt{2}}{2}$
    B. UNDEFINED
    C. UNDEFINED
    D. $-\frac{\sqrt{3}}{3}$
    E. $-\frac{\sqrt{3}}{3}$
    F. $-\frac{\sqrt{3}}{2}$
4. –
    A. $\frac{2\pi}{45}$
    B. $\frac{13\pi}{9}$
    C. 315°
    D. 260°
5. –
    A. $\frac{\pi}{4},\frac{5\pi}{4}$
    B. $\frac{\pi}{6},\frac{5\pi}{6},\frac{7\pi}{6},\frac{11\pi}{6}$
    C. $0,\pi,\frac{\pi}{3},\frac{5\pi}{3}$
    D. $\frac{\pi}{4},\frac{3\pi}{4},\frac{5\pi}{4},\frac{7\pi}{4}$
    E. $\frac{2\pi}{3},\frac{4\pi}{3}$
    F. $\frac{\pi}{6},\frac{5\pi}{6},\frac{\pi}{2}$
    G. $\frac{\pi}{9},\frac{5\pi}{9},\frac{7\pi}{9},\frac{11\pi}{9},\frac{13\pi}{9},\frac{17\pi}{9}$
    H. $\frac{\pi}{4},\frac{5\pi}{4},\frac{2\pi}{3},\frac{4\pi}{3}$
6. NEXT PAGE!
7. –
    A. $\left(-\infty,\frac{1}{3}\right)$
    B. $\left(\frac{6}{5},\frac{4}{3}\right)$
    C. $[0,3]$
    D. $(-\infty,-4)\cup\left(\frac{-\sqrt{15}}{3},\frac{\sqrt{15}}{3}\right)$
8. –
    A. $2x+h$
    B. 322
    C. $-12a+6$
9. –
    A. $y+1=\frac{-10}{7}(x-5)$
    B. $y+2=\frac{-3}{4}(x-4)$
    C. $y+1=\frac{-5}{7}(x-4)$
    D. $y=50$
10. -
    A. XINT: $(3,0)$ YINT: $\left(0,\frac{-9}{4}\right)$
    B. XINT: $\left(\frac{3}{2},0\right)$ YINT: $\left(0,\frac{-3}{5}\right)$
    C. XINT: $(0,0)$, $\left(\frac{3\pm\sqrt{41}}{4},0\right)$ YINT: $(0,0)$
11. $\left(-\frac{7}{19},\frac{11}{19}\right)$

6.



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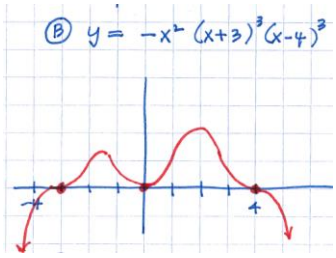

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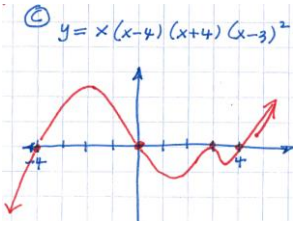

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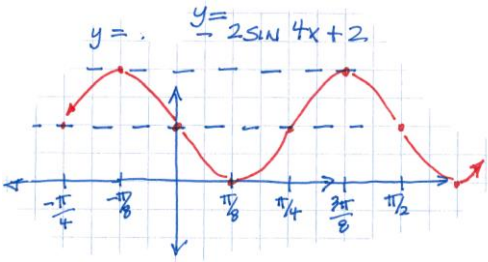

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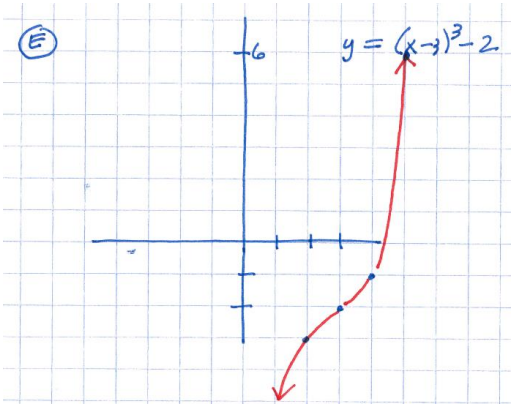

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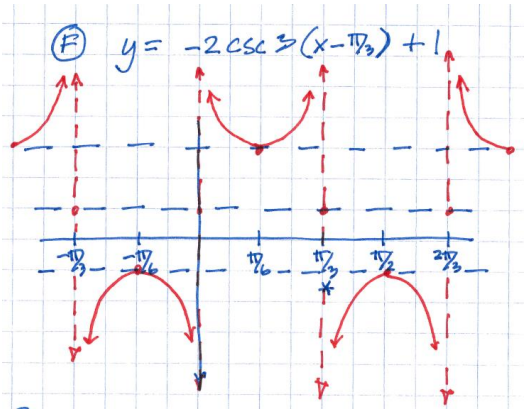

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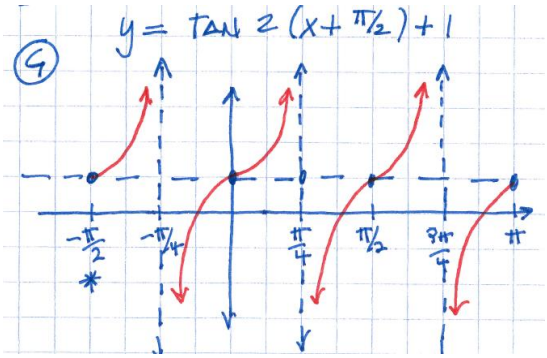

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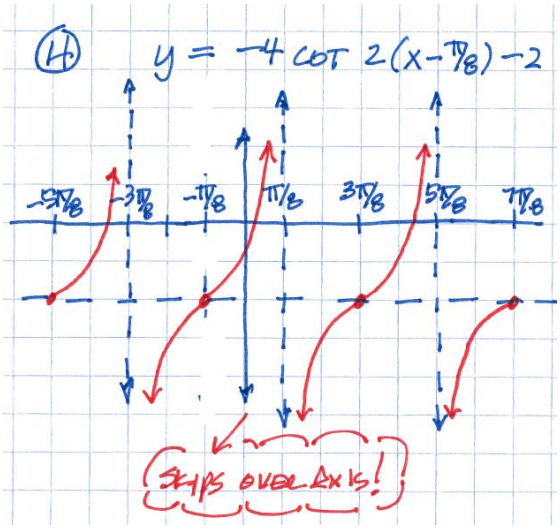

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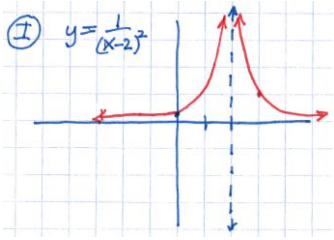

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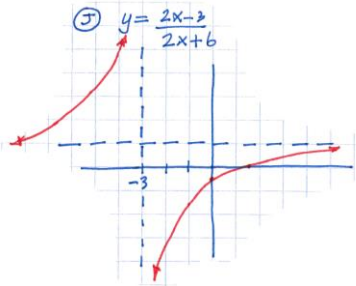

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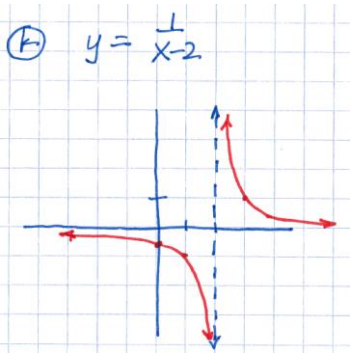

K.