Yohandi - math homework week 12 Exemses 16.4 > analytion counterdocknise = ( ( 3x-4) - along the ) ) does 1. M=-y=-2 sin t N=x=2 cost => de : a cost => de : -a sint \$ May - Ndx = [1-2610+)(2005+)-(2005+)(-2610+)dt 19, M=2xy3 N=4x2y2 i) circulation counterclock wise [[ ( sx + sh ) yx gh = [[ ( s(-A) + sx ) yx gh = [[( 3x - 34) dx dy = PE ( sidx, Az) = s(5xAz)) gx gh : Equation (3) is ventred 4/M=-y=-asmt N=x:20056 23. M=6y+x 6 Max + N dy = (-Asint-Asint) + (2004) (Acost) de [[ (3x - 3x) ] gxgh: [[ (3(h+1)x) - s(gh+x)) ysgh SI ( 3x - 3y ) gx dy = SI (3x - 3xy) gx dy 25. Y: 2 SINK X=2 COSt dy: 2 cost dx:-2 8int : 21722 .. Equation (4) is ventled Area = 9 = 2 xdy - 2ydx 5. M=x-y N=y-x = 5 1 (acost)(acost) - 2 (asmt)(-asmt) of of fuxaux = & F.n ds = [[( sw + sh) yxgh 27. y=8m3+ dy: 35m2+ cost dx =-3cos2+ ont = [[( xx.A) + smxx)) xxyA Area = \$ = 1x dy - 2 y dx = 12 cos 3 (3 sm + cost) - 2 sm3+ (-3 cos 2 sm+) d+ · 3 cucryation constitutions = [[[3(2-x) - 3(x-1)] pxqh 9. M: xy+y2 N:x-y Stuzer = 22 (3x + on) yxgh

= [ [ stand, + six as ] gx gat

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Exercises 16.5
1. Z=X2+y2 44
  let KIT COS A, YIT SINA
    #1/4/2 with AC[0, 217]
    $ 06(0/20) Z=X21y2=1264
   2/= xxy8=1/2 =>11/22
 T(r, 4): (1 cos 4) i+(1 sm 4) j+12K
 with AGEO, 27] & 15/62
5. x2+42+22=9, Z= 5x2+42
  let x=1006 & sin p, y=1 sm & sin p, 2=1000 $
   for => 1x2442,
     => 3 cos $ > \ \ 9 cos 2 + 8 m 2 + 9 sm 2 + sm 2 +
      ⇒ tanp≤1 , · 中· [0, 亚]
   ((4)=(3cospsinp)i+(3smosinp)j+(3cosp)k,
     DECO, 277 & Ф€ CO, 57
7. x2+y2+22=3, Ze[-3,5]
   => r=53
   => (3 000 $ [- [3, 5]
    => pe[3, 27]
  (13000 + mp) i+ (3000 + mp) j+ (5000 p) x,
      ACCO,277] + PECT, 27]
15. (x-2)2+ 22=4, yE[0,3]
   let x-2=rcos 4, == r sm 4
    WITH DECO, 2TI)
th1 :
   HAT
   ((4)= (2+2 cost, ), 2 sma)
   with 2 [0,8] & & E[0,217)
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17. y+22=2, x3+y2=1
    let x=1 cost, y=1 8ma
     with ACTO, 201),
        r2=1
       => 1=+1
    since y+22=2 is inside x2+y2=1
      1494
      => ro E[-1, 1] (we take radius >0)
    => == 1-15 cosA
   T(n)=(rcosa)i+ (18ma)j+(1-1/2000a))
    WHAN relo, 12, 4 & LO, 2T)
  A= SSIRX x Tal drdo
    = ) (cos + 2 in + j - 2 m + k)
         (-remaitrosedi-reogex) dr de
    = 755
23. 2=2-x2-y2, 2=Vx2-y2
    let x=rcost, y=r8m4.
     with Afto, 271)
        7=2-(x2+y2)
          =2-12
         > 1x242
    suce 7-1,5 => LE[-5' 1]
                     one take radius >0)
     #0/AL
  A= SS Virxial do da
  2 ) ((coop i+ smaj-2rk)
(-rsmai+rcosaj) | drda
  = 1 ( \(\sigma \)
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to:-rsmai+rcosaj X44/7 n(2, 4): ccos = i+sm = j+1)x(-asin=1+2cos = j) =- 12i-12j+2K =) -52x-52y+2z=0 33a. x=2005Acos p, y=bsm2cosp, ==csinp 3 ( 22 ) + ( 22 ) + ( 22 ) = cosst cost + 21034 cosst + 81050 co20+811120 =1 b. A= SSITE X F21 do do do = \[ \] \[ \( \tau \) \\ \( \t sinditc kospk) ldos o = ) [ 1/2,5,502,000,0+45,5,520,000,0+45,9,220,400,400,40 37. x2+y2-t=0. 2=2 let x=1007 , 4=1007=x tol =) (2 62 => [ +[-12,52] me take radius > 0. t(r, a) = (r06a) i+(rena) j+ (2r) k. A=SSITux to 1 drdo

27. Tr=cosai+smaj+k

29. E = [[[(006 + 2+5m+)+2rk] 6-4 / ([49001+i0man-) =137 41. Sugare area = STOFIEL DA = \[ \int\_{1} \frac{1(2\pi\_{1} - 2j - 2\pi\_{1})}{12\pi\_{1} - 2j - 2\pi\_{1}} \dy \dx = 1216-18 Exercises 16.6 1. 1(x,2) = xi+x2j+2K. 111=11x xv21=1000 ((2x)412= 54x24) S[G(x,y,2)do = 32x Jux2+1 dxd2=17517-4 6. SSF(x,y,2)dS = SSF(x,y,2) (22)+(32)+(32)2+(32)2 = S((2(x2+y2)-x52)dy dx = 8 | ((12x2-rcosts)) & drda = 525 V = [] (2-x-y) 2 dy ax

19. SSF. n do: SSKy 20 3416, x, 342-12> 23 SS F. ndo: ff(2xy, 2y2, 2x2) 25. Sfr. nd = S ( xy, 0, -2> (x4y2, 1x4y2,-1)dydx = ? L, L, (1+1608, Aswa), LylyA 20. SSR. dr: 55 2-1,2,37 . 20,0,17. # 23 dit

37 SSFn do: [] 24,2,55 20,0,10, #1,292-125

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