16(1) Find parametric curves \( x = f(t), y = g(t), \ t \in [0, 1] \)
which trace the line segment from \((-1, 3)\) to \((3, -2)\)
for \(x\) 4 symb, chk=5, for \(y\) 4 symb, chk=8

10'(1) \( x = \sqrt{t+1}, y = \sqrt{t}, \ t \geq 0 \). Find the cartesian
equation in \(x\) and \(y\). ans has a radical 7 symbols, checksum=3

24a(2) \( x = -\sqrt{t+1}, y = \sqrt{3t}, \ t \geq 0 \). Find the equation
for the line tangent to this curve when \(t = 3\). Write the
equation in the required \(y = mx + b\) form. 7 symbols, checksum=3

34(2) For the Lissajous curves (pictured on page 180, problem
34 or, in the website’s WolframAlpha link, enter the two equations
below separated with a comma), the parametric equations are
\( x = \sin(2t), y = \sin(3t) \)

(a) Find \( \frac{dy}{dx} \) as a function of \(t\). 18 symb, chk=10

(b) Find a \(t\) in the first quadrant, \([0, \pi/2]\), where the
tangent to the curve is horizontal. 3 symbols, checksum=6