Each of the following "derivatives" has been done *incorrectly*. In each case below, find a counterexample that shows why the reasoning is incorrect. Then correct the mistakes by finding the actual derivative of the left hand side.

For example: The statement "$\frac{d}{dx}f(2x) =^? f'(2x)$" is false because if $f(x) = x^2$, then we have $\frac{d}{dx}f(2x) = \frac{d}{dx}[4x^2] = 8x$, but on the other hand, $f'(x) = 2x$, so $f'(2x) = 4x$. In general, the correct derivative would be "$\frac{d}{dx}f(2x) = f'(2x) \cdot 2$" by the chain rule.

(a) $\dfrac{d}{dx}f(x+5) =^? f'(x)$

(b) $\dfrac{d}{dt}g(t/3) =^? g'(t)/3$

(c) $\dfrac{d}{ds}h(s^2) =^? h'(2s)$

(d) $\dfrac{d}{dt}k(x) =^? k'(x)$

(f) $\dfrac{d}{dx}l(x\cos(x)) =^? l(\cos(x) - x\sin(x)) \cdot x\cos(x)$

(g) $\dfrac{d}{du}[F(u)\sin(2u)] =^? 2F'(u)\cos(2u)$

(h) $\dfrac{d}{dt}G(\sin(t)) =^? G'(\sin(t)) + \cos(t)$