Practice differentiating the following with respect to **t**.

1.

(a). If x does not depend on t (i.e. x is constant), then $\dfrac{d}{dt}[x] =$

(b). If x depends on t, then $\dfrac{d}{dt}[x] =$

2.

(a). If y does not depend on t (i.e. y is constant), then $\dfrac{d}{dt}\left[y^2\right] =$

(b). If y depends on t, then $\dfrac{d}{dt}\left[y^2\right] =$

3.

(a). If x does not depend on t (i.e. x is constant) and y depends on t, then $\dfrac{d}{dt}\left[x^2 + y^2\right] =$

(b). If x depends on t and y does not depend on t (i.e. y is constant), then $\dfrac{d}{dt}\left[x^2 + y^2\right] =$

(c). If x depends on t and y depends on t, then $\dfrac{d}{dt}\left[x^2 + y^2\right] =$

4.

(a). If x does not depend on t (i.e. x is constant) and y depends on t, then $\dfrac{d}{dt}[xy] =$

(b). If x depends on t and y does not depend on t (i.e. y is constant), then $\dfrac{d}{dt}[xy] =$

(c). If x depends on t and y depends on t, then $\dfrac{d}{dt}[xy] =$

5.

(a). If x does not depend on t (i.e. x is constant), then $\dfrac{d}{dt}\left[\sin x\right] =$

(b). If x depends on t, then $\dfrac{d}{dt}\left[\sin x\right] =$

6.

(a). If x does not depend on t (i.e. x is constant) and y depends on t, then $\dfrac{d}{dt}\left[\dfrac{x}{y}\right] =$

(b). If x depends on t and y does not depend on t (i.e. y is constant), then $\dfrac{d}{dt}\left[\dfrac{x}{y}\right] =$

(c). If x depends on t and y depends on t , then $\dfrac{d}{dt}\left[\dfrac{x}{y}\right] =$

7.

(a). If r does not depend on t (i.e. r is constant) and h depends on t, then $\dfrac{d}{dt}\left[\dfrac{1}{3}\pi r^2 h\right] =$

(b). If r depends on t and h does not depend on t (i.e. h is constant), then $\dfrac{d}{dt}\left[\dfrac{1}{3}\pi r^2 h\right] =$

(c). If r depends on t and h depends on t, then $\dfrac{d}{dt}\left[\dfrac{1}{3}\pi r^2 h\right] =$