MAT250 Quiz 2
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Problem 1:

```
> h := (7·t - 2)^5
```

$$h := (7\,t-2)^5 \tag{1}$$

```
> h_p := diff(h, t)
```

$$h\_p := 35\,(7\,t-2)^4 \tag{2}$$

```
> h_pp := diff(h_p, t)
```

$$h\_pp := 980\,(7\,t-2)^3 \tag{3}$$

```
> with(inttrans) :
```

```
> laplace(h, t, s)
```

$$-\frac{8\,(4\,s^5-70\,s^4+980\,s^3-10290\,s^2+72030\,s-252105)}{s^6} \tag{4}$$

```
> laplace(h_p, t, s)
```

$$\frac{280\,(2\,s^4-28\,s^3+294\,s^2-2058\,s+7203)}{s^5} \tag{5}$$

```
> laplace(h_pp, t, s)
```

$$-\frac{1960\,(4\,s^3-42\,s^2+294\,s-1029)}{s^4} \tag{6}$$

Problem 2:

```
> with(inttrans) :
```

```
> laplace(exp(-3·t)·(2·cos(5·t) - 3·sin(5·t)), t, s)
```

$$\frac{-9+2\,s}{(s+3)^2+25} \tag{7}$$