5.3 and 5.4 #6

Write the integral as a sum of integrals without absolute values and evaluate:

$$\int_{\pi/6}^{\pi} |\cos x| \, dx = \boxed{} \quad \text{▦}$$

5.3-5.4 #15

Let the function F be defined by

$$F(x) = \int_{-7}^{x} (t+2)(t-10)\, e^{-t^2}\, dt.$$

Give the largest interval(s) for which F is decreasing.

Give the largest interval(s) for which F is increasing.

If there is more than one interval, separate the intervals with a comma. Enter NONE if there are no intervals.

5.5 #5

A particle moves in a straight line with velocity $12 - 2t$ ft/s. Find the total displacement and total distance traveled over the time interval $[0, 8]$.

Displacement: ⊞ ft.

Distance: ⊞ ft.

5.6 #2

Evaluate the indefinite integral.

(Use symbolic notation and fractions where needed.)

$$\int \frac{x}{\sqrt{x^2+2}}\, dx = \boxed{} \;\;\boxed{\vcenter{\hbox{:::}}} \;\; + C.$$

5.7 #10

Evaluate the indefinite integral.

(Use symbolic notation and fractions where needed.)

$$\int 4 \cot(4x)\,dx = \boxed{} \quad \boxed{\vcenter{\hbox{$\vdots\vdots$}}} \quad +C$$

5.8 #4

Find the solution to

$$\frac{dy}{dt} = 7y$$

satisfying

$$y(1) = 2$$

$y = $ [   ] ⊞

D6.1 #1

The region between the graphs of $f(x) = x^2 + 3$ and $g(x) = -2x + 3$ has area [   ] ⊞ square units.