

$$
\begin{array}{cc}
\left.\left[4 x-\frac{x^{2}}{2}\right]_{0}^{4}+\left[\frac{x^{2}}{2}-4 x\right]_{4}^{5} \quad \begin{array}{l}
16-8-0-0+\frac{25}{2}-20-(8-16) \\
16-8+\frac{25}{2}-20-8+16=
\end{array}\right) \frac{17}{2}
\end{array}
$$

3. $\int_{0}^{4}|x-\sqrt{x}| d x$

$$
\left.\begin{array}{rl}
x-\sqrt{x} & =0 \\
x & =\sqrt{x} \\
-1+\begin{array}{l}
x \\
x
\end{array} \\
\text { only } x+1,0
\end{array}\right\}
$$

$$
\begin{aligned}
& \int_{0}^{1}(\sqrt{x}-x) d x+\int_{1}^{4}(x-\sqrt{x}) d x \\
& {\left[\frac{2 x^{3 / 2}}{3}-\frac{x^{2}}{2}\right]_{0}^{1}+\left[\frac{x^{2}}{2}-\frac{2 x^{3 / 2}}{3}\right]_{1}^{4}} \\
& \frac{2}{3}-\frac{1}{2}-0-0+8-\frac{16}{3}-\left(\frac{1}{2}-\frac{2}{3}\right) \\
& =3
\end{aligned}
$$

4. $\int_{0}^{4}\left|9-x^{2}\right| d x$

$$
9-x^{2}=0
$$

$$
\begin{gathered}
x^{2}=9 \\
+1-\quad x= \pm 3 \\
\hline 3
\end{gathered}
$$

$$
\begin{aligned}
& \int_{0}^{3}\left(9-x^{2}\right) d x+\int_{3}^{4}\left(x^{2}-9\right) d x \\
& {\left[9 x-\frac{x^{3}}{3}\right]_{0}^{3}+\left[\frac{x^{3}}{3}-9 x\right]_{3}^{4}} \\
& 27-9-0-0+\frac{64}{3}-36-(9-27) \\
& \\
& =\frac{64}{3}
\end{aligned}
$$

$$
\begin{aligned}
& \begin{array}{l}
\text { 1. } \int_{-2}^{2}\left|1-x^{2}\right|^{-1} d x \int^{-2}-\left(1-x^{2}\right)+\int_{1}^{1} 1-x^{2}+\int_{2}^{2}\left(1-x^{2}\right) \\
\left.0=1-x^{2}\right\}^{-2}-\left.\left(x-\frac{x^{3}}{3}\right)\right|_{-2} ^{-1}+x-\left.\frac{x_{7}}{3}\right|_{-1} ^{1}-\left.\left(x-\frac{x^{3}}{3}\right)\right|_{1} ^{2} \\
x= \pm 1 \\
=1+1-\left(-\frac{3}{3}-\frac{2}{3}\right)+\left(\frac{23}{3}+\frac{2}{3}\right)-\left(-\frac{3}{3}-\frac{7}{3}\right)
\end{array} \\
& -\left(-\frac{4}{3}\right)+\left(\frac{4}{3}\right)-\left(-\frac{4}{3}\right)=4
\end{aligned}
$$

