## POLYNOMIALS AND SOUND

| Graph | Polynomial | Graph | Polynomial |
| :---: | :---: | :---: | :---: |
|  | $T_{3}(x)=4 x^{3}-3 x$ |  | $T_{4}(x)=8 x^{4}-8 x^{2}+1$ |
|  | $T_{5}(x)=16 x^{5}-20 x^{3}+5 x$ |  | $T_{6}(x)=32 x^{6}-48 x^{4}+18 x^{2}-1$ |
|  | $T_{7}(x)=64 x^{7}-112 x^{5}+56 x^{3}-7 x$ |  | $T_{8}(x)=128 x^{8}-256 x^{6}+160 x^{4}-32 x^{2}+1$ |
|  | $T_{9}(x)=256 x^{9}-576 x^{7}+432 x^{5}-120 x^{3}+9 x$ |  |  |

Use the table above to answer the following questions. Show your work on a separate sheet of paper.

1) Find $T_{3}(x)+T_{5}(x)$.
2) Find the difference: $T_{4}(x)-T_{6}(x)$.
3) Find $T_{8}(x)-T_{6}(x)$.
4) Find the sum of $T_{9}(x)+T_{7}(x)$.

## Web Tool

To use the web tool and hear your polynomial, follow the steps below.

1) Go to k20center.ou.edu/e-learning/polynomials-sound/.
2) Turn down the Effect Volume.
3) Turn up the Noeffect Volume.
4) Select a "Sample \#."
5) Press the "Start" button.
6) Enter the new polynomial.

- Click on each coefficient or exponent to edit its value.

7) Turn down the Noeffect volume.
8) Turn up the Effect volume.
