

63. **★ EXTENDED RESPONSE** A 60-inch-long bookshelf is warped under 180 pounds of books. The deflection d of the bookshelf (in inches) is given by

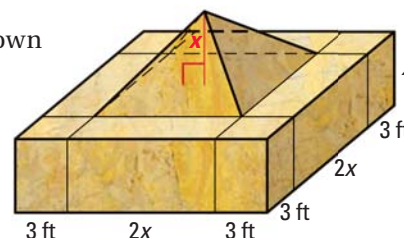
$$d = (2.724 \times 10^{-7})x^4 - (3.269 \times 10^{-5})x^3 + (9.806 \times 10^{-4})x^2$$

where x is the distance (in inches) from the bookshelf's left end. Approximate the real zeros of the function on the domain $0 \leq x \leq 60$. Explain why all your answers make sense in this situation.

64. **★ EXTENDED RESPONSE** You plan to save \$1000 each year towards buying a used car in four years. At the end of each summer, you deposit \$1000 earned from summer jobs into your bank account. The table shows the value of your deposits over the four year period. In the table, g is the growth factor $1 + r$ where r is the annual interest rate expressed as a decimal.

	Year 1	Year 2	Year 3	Year 4
Value of 1st deposit	1000	$1000g$	$1000g^2$	$1000g^3$
Value of 2nd deposit	—	1000	?	?
Value of 3rd deposit	—	—	1000	?
Value of 4th deposit	—	—	—	1000

- a. **Apply** Copy and complete the table.
- b. **Model** Write a polynomial function that gives the value v of your account at the end of the fourth summer in terms of g .
- c. **Reasoning** You want to buy a car that costs about \$4300. What growth factor do you need to obtain this amount? What annual interest rate do you need? Explain how you found your answers.
65. **CHALLENGE** A monument with the dimensions shown is to be built using 1000 cubic feet of marble. What is the value of x ?



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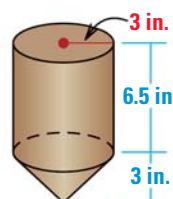
66. **★ TAKS PRACTICE** Which of the following is the solution of this system of linear equations? **TAKS Obj. 4**

$$\begin{aligned} -2x + 3y &= 20 \\ 4x + 4y &= -15 \end{aligned}$$

- (A) $(-\frac{25}{4}, \frac{5}{2})$ (B) $(\frac{5}{2}, -\frac{25}{4})$ (C) $(\frac{25}{2}, \frac{35}{4})$ (D) No solution

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67. **★ TAKS PRACTICE** What is the approximate volume of the bird feeder shown? **TAKS Obj. 8**



- (F) 156 in.^3 (G) 184 in.^3
(H) 212 in.^3 (J) 269 in.^3