Name

11-1B Lesson Master

Questions on SPUR Objectives
See Student Edition pages 792–795 for objectives.

PROPERTIES Objective E

In 1–6, tell if the expression is a polynomial. If it is, give its degree. If it is not, explain why not.

1. $49x - 7x^{-1}$ _____

2. $7(4 - 7x)$ _____

3. $3x^x - 2$ _____

4. $19x^7 - 7x$ _____

5. $1.8x^{10} - \sqrt{15} \cdot x^{17}$ _____

6. 0 _____

In 7–14, a. write the polynomial in standard form, b. give its degree, c. give its leading coefficient, and d. give the number of terms it has.

7. $9x^2 + 7x^3$

a. _____

b. _____ c. _____ d. _____

8. $8x^2 + 4 - 6x$

a. _____

b. _____ c. _____ d. _____

9. $x^5 - 2x^3 - x^2 - 5$

a. _____

b. _____ c. _____ d. _____

10. $12 - 6x$

a. _____

b. _____ c. _____ d. _____

11. $-14x^7 + 6x^{19} - x^3 - x + 4x^{10}$

a. _____

b. _____ c. _____ d. _____

12. $12x^4$

a. _____

b. _____ c. _____ d. _____

In 13 and 14, write each expression in standard form (using a CAS if necessary), and give its degree.

13. Let $f(x) = x^2 + x$ and $g(x) = x - 1$.

a. $g(x) + f(x) =$ _____, degree = _____

b. $f(g(x)) =$ _____, degree = _____

14. Let $f(x) = x^2 - 5$ and $g(x) = 2x^3 + 3$.

a. $g(x) + f(x) =$ _____, degree = _____

b. $f(g(x)) =$ _____, degree = _____

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USES Objective H

In 15 and 16, use $x = 1 + r$.

15. For five years, Mr. Volaskis invested \$1600 per year in a retirement account paying r% interest compounded annually. No additional money was deposited or withdrawn.

    a. Write a polynomial expression to give the total amount in his account at the end of the fifth year.

    _____

    b. Determine how much is in his account if it earned 4.8% each year. _____

16. A parents' organization saved the fun-fair profits in a special fund for new playground equipment. The money was left untouched and earned r% interest compounded annually. The table at the right shows each deposit, made in June of each year.

Year	Deposit (\$)
2004	800
2005	1150
2006	1200
2007	750
2008	1130
2009	980

    a. Write a polynomial expression for the amount in the account after the deposit in June, 2009.

    _____

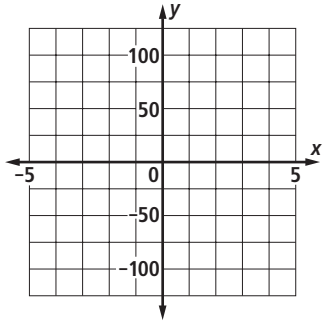
    b. Evaluate how much was in the account after the June, 2009 deposit, if $r = 3.7\%$. _____

REPRESENTATIONS Objective J

In 17 and 18, a polynomial function is given. a. Use a CAS to sketch the graph of the polynomial function on the given window. b. Estimate $f(-2)$, $f(0)$, and $f(1)$ from the graph. c. Evaluate $f(-2)$, $f(0)$, and $f(1)$.

17. $f(x) = -4x^4 + 12x^2 - 3x + 20$

    a.

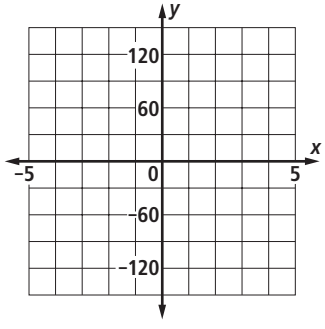


    b. _____

    c. _____

18. $P(x) = x^5 + 4.5x - 7$

    a.



    b. _____

    c. _____

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