

### A.SSE.A.1: Modeling Expressions 1

- 1 What is the constant term of the polynomial  $4d + 6 + 3d^2$ ?
- 1) 6
  - 2) 2
  - 3) 3
  - 4) 4
- 2 When  $3x^2 + 7x - 6 + 2x^3$  is written in standard form, the leading coefficient is
- 1) 7
  - 2) 2
  - 3) 3
  - 4) -6
- 3 What is the degree of the polynomial  $2x + x^3 + 5x^2$ ?
- 1) 1
  - 2) 2
  - 3) 3
  - 4) 4
- 4 What is the degree of the polynomial  $5x - 3x^2 - 1 + 7x^3$ ?
- 1) 1
  - 2) 2
  - 3) 3
  - 4) 5
- 5 An expression of the fifth degree is written with a leading coefficient of seven and a constant of six. Which expression is correctly written for these conditions?
- 1)  $6x^5 + x^4 + 7$
  - 2)  $7x^6 - 6x^4 + 5$
  - 3)  $6x^7 - x^5 + 5$
  - 4)  $7x^5 + 2x^2 + 6$
- 6 Which polynomial has a leading coefficient of 4 and a degree of 3?
- 1)  $3x^4 - 2x^2 + 4x - 7$
  - 2)  $4 + x - 4x^2 + 5x^3$
  - 3)  $4x^4 - 3x^3 + 2x^2$
  - 4)  $2x + x^2 + 4x^3$
- 7 Students were asked to write an expression which had a leading coefficient of 3 and a constant term of -4. Which response is correct?
- 1)  $3 - 2x^3 - 4x$
  - 2)  $7x^3 - 3x^5 - 4$
  - 3)  $4 - 7x + 3x^3$
  - 4)  $-4x^2 + 3x^4 - 4$
- 8 An example of a sixth-degree polynomial with a leading coefficient of seven and a constant term of four is
- 1)  $6x^7 - x^5 + 2x + 4$
  - 2)  $4 + x + 7x^6 - 3x^2$
  - 3)  $7x^4 + 6 + x^2$
  - 4)  $5x + 4x^6 + 7$
- 9 Students were asked to write  $2x^3 + 3x + 4x^2 + 1$  in standard form. Four student responses are shown below.
- Alexa:  $4x^2 + 3x + 2x^3 + 1$   
Carol:  $2x^3 + 3x + 4x^2 + 1$   
Ryan:  $2x^3 + 4x^2 + 3x + 1$   
Eric:  $1 + 2x^3 + 3x + 4x^2$
- Which student's response is correct?
- 1) Alexa
  - 2) Carol
  - 3) Ryan
  - 4) Eric
- 10 Students were asked to write  $6x^5 + 8x - 3x^3 + 7x^7$  in standard form. Shown below are four student responses.
- Anne:  $7x^7 + 6x^5 - 3x^3 + 8x$   
Bob:  $-3x^3 + 6x^5 + 7x^7 + 8x$   
Carrie:  $8x + 7x^7 + 6x^5 - 3x^3$   
Dylan:  $8x - 3x^3 + 6x^5 + 7x^7$
- Which student is correct?
- 1) Anne
  - 2) Bob
  - 3) Carrie
  - 4) Dylan

- 11 Which statement is correct about the polynomial  $3x^2 + 5x - 2$ ?
- 1) It is a third-degree polynomial with a constant term of  $-2$ .
  - 2) It is a third-degree polynomial with a leading coefficient of 3.
  - 3) It is a second-degree polynomial with a constant term of 2.
  - 4) It is a second-degree polynomial with a leading coefficient of 3.
- 12 Mrs. Allard asked her students to identify which of the polynomials below are in standard form and explain why.
- I.  $15x^4 - 6x + 3x^2 - 1$
  - II.  $12x^3 + 8x + 4$
  - III.  $2x^5 + 8x^2 + 10x$
- Which student's response is correct?
- 1) Tyler said I and II because the coefficients are decreasing.
  - 2) Susan said only II because all the numbers are decreasing.
  - 3) Fred said II and III because the exponents are decreasing.
  - 4) Alyssa said II and III because they each have three terms.
- 13 When  $(x)(x - 5)(2x + 3)$  is expressed as a polynomial in standard form, which statement about the resulting polynomial is true?
- 1) The constant term is 2.
  - 2) The leading coefficient is 2.
  - 3) The degree is 2.
  - 4) The number of terms is 2.
- 14 When multiplying polynomials for a math assignment, Pat found the product to be  $-4x + 8x^2 - 2x^3 + 5$ . He then had to state the leading coefficient of this polynomial. Pat wrote down  $-4$ . Do you agree with Pat's answer? Explain your reasoning.
- 15 Konnor wants to burn 250 Calories while exercising for 45 minutes at the gym. On the treadmill, he can burn 6 Cal/min. On the stationary bike, he can burn 5 Cal/min. If  $t$  represents the number of minutes on the treadmill and  $b$  represents the number of minutes on the stationary bike, which expression represents the number of Calories that Konnor can burn on the stationary bike?
- 1)  $b$
  - 2)  $5b$
  - 3)  $45 - b$
  - 4)  $250 - 5b$
- 16 To watch a varsity basketball game, spectators must buy a ticket at the door. The cost of an adult ticket is \$3.00 and the cost of a student ticket is \$1.50. If the number of adult tickets sold is represented by  $a$  and student tickets sold by  $s$ , which expression represents the amount of money collected at the door from the ticket sales?
- 1)  $4.50as$
  - 2)  $4.50(a + s)$
  - 3)  $(3.00a)(1.50s)$
  - 4)  $3.00a + 1.50s$
- 17 Bryan's hockey team is purchasing jerseys. The company charges \$250 for a onetime set-up fee and \$23 for each printed jersey. Which expression represents the total cost of  $x$  number of jerseys for the team?
- 1)  $23x$
  - 2)  $23 + 250x$
  - 3)  $23x + 250$
  - 4)  $23(x + 250)$
- 18 Andy has \$310 in his account. Each week,  $w$ , he withdraws \$30 for his expenses. Which expression could be used if he wanted to find out how much money he had left after 8 weeks?
- 1)  $310 - 8w$
  - 2)  $280 + 30(w - 1)$
  - 3)  $310w - 30$
  - 4)  $280 - 30(w - 1)$

## A.SSE.A.1: Modeling Expressions 1

### Answer Section

1 ANS: 1 REF: 082208ai

2 ANS: 2

$$2x^3 + 3x^2 + 7x - 6$$

REF: 082216ai

3 ANS: 3 REF: 082309ai

4 ANS: 3 REF: 012414ai

5 ANS: 4 REF: 061602ai

6 ANS: 4

$$4x^3 + x^2 + 2x$$

REF: 012024ai

7 ANS: 4

$$3x^4 - 4x^2 - 4$$

REF: 062122ai

8 ANS: 2 REF: 062220ai

9 ANS: 3 REF: 012303ai

10 ANS: 1 REF: 061905ai

11 ANS: 4 REF: 062323ai

12 ANS: 3 REF: 061819ai

13 ANS: 2

$$(x^2 - 5x)(2x + 3) = 2x^3 + 3x^2 - 10x^2 - 15x = 2x^3 - 7x^2 - 15x$$

REF: 081912ai

14 ANS:

No,  $-2$  is the coefficient of the term with the highest power.

REF: 081628ai

15 ANS: 2 REF: 081712ai

16 ANS: 4 REF: 081503ai

17 ANS: 3 REF: 081901ai

18 ANS: 4 REF: 011718ai