

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 What is the constant term of the polynomial

$$2x^3 - x + 5 + 4x^2?$$

- 1) 5
- 2) 2
- 3) 3
- 4) 4

- 3 When $3x^2 + 7x - 6 + 2x^3$ is written in standard form, the leading coefficient is

- 1) 7
- 2) 2
- 3) 3
- 4) -6

- 4 What is the degree of the polynomial $2x + x^3 + 5x^2$?

- 1) 1
- 2) 2
- 3) 3
- 4) 4

- 5 What is the degree of the polynomial $2x - x^2 + 4x^3$?

- 1) 1
- 2) 2
- 3) 3
- 4) 4

- 6 What is the degree of the polynomial

$$5x - 3x^2 - 1 + 7x^3?$$

- 1) 1
- 2) 2
- 3) 3
- 4) 5

- 7 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) $2x + x^2 + 4x^3$

- 8 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) $-4x^2 + 3x^4 - 4$

- 9 A student creates a fourth-degree trinomial with a leading coefficient of 2 and a constant value of 5. The trinomial could be

- 1) $2x^4 + 3x^2 + 5$
- 2) $2x^4 + 5x + 3$
- 3) $4x^2 - 3x + 5$
- 4) $4x^3 - 5x^2 + 3$

- 10 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) $7x^5 + 2x^2 + 6$

- 11 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) $5x + 4x^6 + 7$

- 12 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

- 13 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

- 14 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.

- 15 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.

- 16 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.
- 17 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.
- 18 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) $250 - 5b$
- 19 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) $3.00a + 1.50s$
- 20 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) $23(x + 250)$
- 21 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: 1 REF: 012504ai

3 ANS: 2

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

REF: 082216ai

4 ANS: 3 REF: 082309ai

5 ANS: 3 REF: 062408ai

6 ANS: 3 REF: 012414ai

7 ANS: 4

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

REF: 012024ai

8 ANS: 4

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

REF: 062122ai

9 ANS: 1 REF: 082405ai

10 ANS: 4 REF: 061602ai

11 ANS: 2 REF: 062220ai

12 ANS: 3 REF: 012303ai

13 ANS: 1 REF: 061905ai

14 ANS: 4 REF: 062323ai

15 ANS: 3 REF: 061819ai

16 ANS: 2

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

REF: 081912ai

17 ANS:

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

REF: 081628ai

18 ANS: 2 REF: 081712ai

19 ANS: 4 REF: 081503ai

20 ANS: 3 REF: 081901ai

21 ANS: 4 REF: 011718ai