

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

- 1 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)  $7x^5 + 2x^2 + 6$
- 2 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.
- 3 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?
- 4 Which expression represents "5 less than twice  $x$ "?
- 5 A correct translation of "six less than twice the value of  $x$ " is
- 6 Which algebraic expression represents 15 less than  $x$  divided by 9?
- 7 When translated into symbols, "three less than half of a number" is
- 8 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?
- 9 Mr. Turner bought  $x$  boxes of pencils. Each box holds 25 pencils. He left 3 boxes of pencils at home and took the rest to school. Which expression represents the total number of pencils he took to school?
- 10 Marie currently has a collection of 58 stamps. If she buys  $s$  stamps each week for  $w$  weeks, which expression represents the total number of stamps she will have?
- 11 Tim ate four more cookies than Alice. Bob ate twice as many cookies as Tim. If  $x$  represents the number of cookies Alice ate, which expression represents the number of cookies Bob ate?

- 12 Timmy bought a skateboard and two helmets for a total of  $d$  dollars. If each helmet cost  $h$  dollars, the cost of the skateboard could be represented by
- 13 Marcy determined that her father's age is four less than three times her age. If  $x$  represents Marcy's age, which expression represents her father's age?
- 14 If Angelina's weekly allowance is  $d$  dollars, which expression represents her allowance, in dollars, for  $x$  weeks?
- 15 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?
- 16 Which expression represents the number of hours in  $w$  weeks and  $d$  days?
- 17 Jose wants to ride his bike a total of 50 miles this weekend. If he rides  $m$  miles on Saturday, which expression represents the number of miles he must ride on Sunday?
- 18 Owino gets paid \$280 per week plus 5% commission on all sales for selling electronic equipment. If he sells  $n$  dollars worth of electronic equipment in one week, which algebraic expression represents the amount of money he will earn that week?
- 19 Julie has three children whose ages are consecutive odd integers. If  $x$  represents the youngest child's age, which expression represents the sum of her children's ages?
- 20 What is the perimeter of a regular pentagon with a side whose length is  $x + 4$ ?
- 21 The length of a rectangular room is 7 less than three times the width,  $w$ , of the room. Which expression represents the area of the room?

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**Answer Section**

1 ANS: 4 REF: 061602ai

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

REF: 081628ai

3 ANS:  
 $5b$ 

REF: 081712ai

4 ANS:  
 $2x - 5$ 

REF: 061301ia

5 ANS:  
 $2x - 6$ 

REF: 081215ia

6 ANS:  
 $\frac{x}{9} - 15$ 

REF: 081110ia

7 ANS:  
 $\frac{1}{2}x - 3$ 

REF: 061617ia

8 ANS:  
 $3.00a + 1.50s$ 

REF: 081503ai

9 ANS:  
 $25x - 75$   
 $25(x - 3) = 25x - 75$ 

REF: 060823ia

10 ANS:  
 $58 + sw$ 

REF: 081305ia

11 ANS:  
 $2(x + 4)$ 

REF: 011104ia

12 ANS:  
 $d - 2h$

REF: 011205ia

13 ANS:  
 $3x - 4$

REF: 061204ia

14 ANS:  
 $dx$

REF: 011303ia

15 ANS:  
 $280 - 30(w - 1)$

REF: 011718ai

16 ANS:  
 $168w + 24d$

REF: 061323ia

17 ANS:  
 $50 - m$

REF: 011507ia

18 ANS:  
 $280 + 0.05n$

REF: 061519ia

19 ANS:  
 $3x + 6$   
 $x + x + 2 + x + 4 = 3x + 6$

REF: 011430ia

20 ANS:  
 $5x + 20$   
 $5(x + 4) = 5x + 20$

REF: 081013ia

21 ANS:  
 $3w^2 - 7w$   
 $A = lw = (3w - 7)(w) = 3w^2 - 7w$

REF: 010924ia