

Name _____

MULTIPLE CHOICE. Choose the one alternative that best completes the statement or answers the question.

Multiply and simplify.

1) $(a - 5)(a^2 + 5a + 25)$

A) $a^3 - 125$

B) $a^3 - 10a^2 - 50a - 125$

C) $a^3 + 10a^2 + 50a - 125$

D) $a^3 - 11$

1) _____

2) $(x - 10)(x + 4)$

A) $2x^2 + 40$

B) $x^2 + 6x + 40$

C) $2x - 40$

D) $x^2 - 6x - 40$

2) _____

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

A) $-2x^5 + 4x^4 + 2x$

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

C) $-2x^5 - 8x^3 - 4$

D) $-2x^5 - 8x^4 - 4x$

3) _____

4) $(4xy)^3(4x^4y^4)^2$

A) $96x^{24}y^{24}$

B) $1024x^{11}y^{11}$

C) $48x^8y^8$

D) $16x^{11}y^{11}$

4) _____

5) $(x^6)^4$

A) x^{24}

B) $4x^6$

C) x^{10}

D) $4x^{24}$

5) _____

6) $(8x + 1)^2$

A) $64x^2 + 16x + 1$

B) $8x^2 + 1$

C) $8x^2 + 16x + 1$

D) $64x^2 + 1$

6) _____

7) $(9x^6)^2$

A) $81x^8$

B) $81x^{12}$

C) $9x^8$

D) $9x^{12}$

7) _____

8) $(-3x^4)(2x^9)$

A) $-6x^{13}$

B) $-6x^{36}$

C) $6x^{13}$

D) $6x^{36}$

8) _____

9) $y^4 \cdot y^{11}$

A) $2y^{15}$

B) y^{44}

C) $2y^{44}$

D) y^{15}

9) _____

10) $(4x^4)^3$

A) $64x^7$

B) $64x^{12}$

C) $4x^7$

D) $4x^{12}$

10) _____

11) $x^8 \cdot x^2$

A) x^{16}

B) x^{10}

C) $2x^{10}$

D) $2x^{16}$

11) _____

Write the sentence as an equation. Use x to represent "a number."

12) The quotient of 16 and a number equals 8.

12) _____

A) $\frac{16}{x} = 8$

B) $\frac{x}{16} = 8$

C) $16 - x = 8$

D) $16x = 8$

13) Eight subtracted from five times a number is 62.

13) _____

A) $5(x - 8) = 62$

B) $8(5 - x) = 62$

C) $8 - 5x = 62$

D) $5x - 8 = 62$

Simplify.

14) $(y^6)^8 \cdot (y^3)^5$

14) _____

A) y^{58}

B) y^{126}

C) y^{112}

D) y^{63}

15) $(-6x)(5x^6)^3$

15) _____

A) $-750x^{19}$

B) $-30x^{19}$

C) $-750x^9$

D) $-750x^{18}$

16) $(y^5)^3$

16) _____

A) $3y^5$

B) y^{15}

C) $3y^{15}$

D) y^8

Simplify the expression.

17) $8x + 6(x + 7)$

17) _____

A) $9x + 42$

B) $48x + 13$

C) $14x + 42$

D) $14x - 42$

18) $5(x - 1) - 11x$

18) _____

A) $-6x + 5$

B) $16x - 5$

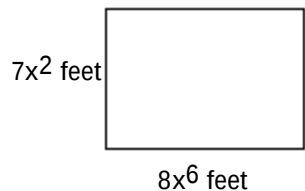
C) $-16x + 5$

D) $-6x - 5$

Use the product rule to simplify. Write the results using exponents.

19) The rectangle below has width $7x^2$ feet and length $8x^6$ feet. Find the area as an expression of x.

19) _____



A) $15x^9$ sq ft

B) $56x^9$ sq ft

C) $56x^8$ sq ft

D) $15x^8$ sq ft

Add or subtract as indicated.

20) $(11x - 7) - (3x - 4)$

20) _____

A) $14x - 11$

B) $8x - 11$

C) $8x - 3$

D) $14x - 3$

21) $(8y + 5) + (11y - 4)$

21) _____

A) $19y^2 + 1$

B) $19y - 1$

C) $19y + 1$

D) $88y^2 - 20$

22) $(11x + 3) - (5x - 6)$

22) _____

A) $16x - 3$

B) $16x + 9$

C) $6x - 3$

D) $6x + 9$

- 23) Subtract $(-3y^2 + 10)$ from $(6y^2 + 8y - 4)$ 23) _____
 A) $9y^2 - 2y - 4$ B) $9y^2 + 8y - 14$ C) $3y^2 + 8y + 6$ D) $3y^2 - 2y - 4$

Solve the equation.

- 24) $6x - 18 - 5x = -9$ 24) _____
 A) -27 B) 9 C) -9 D) 27

- 25) $6z - z = 9 - 19$ 25) _____
 A) 5 B) -5 C) 2 D) -2

- 26) $203 - 101 = 17(x - 3)$ 26) _____
 A) -15 B) -9 C) 15 D) 9

- 27) $-7x + 9 = 79$ 27) _____
 A) 81 B) 20 C) 77 D) -10

- 28) $\frac{y}{10} = (-9)^2 - |23| + (-5)^2$ 28) _____
 A) -830 B) 830 C) 1290 D) -330

In retailing, the retail price P of an item can be computed using the equation $P = C + M$, where C is the wholesale cost of the item and M is the amount of markup.

- 29) A retailer sells a game for \$38. If his wholesale cost for the game was \$26, what was his markup? 29) _____
 A) \$13 B) \$11 C) \$12 D) \$64

Subtract the polynomials.

- 30) $(4a^2 - a + 3) - (14a^2 + 8a - 15)$ 30) _____
 A) $-10a^2 - 9a + 18$ B) $-10a^2 - 7a - 12$ C) $10a^2 + 7a - 12$ D) $10a^2 + 9a - 18$

Multiply.

- 31) $(2x + 10)(x - 6)$ 31) _____
 A) $2x^2 - 25x - 60$ B) $x^2 - 60x - 2$ C) $2x^2 - 2x - 60$ D) $x^2 - 2x - 25$

- 32) $(3a - 1)^2$ 32) _____
 A) $9a^2 - 6a + 1$ B) $9a^2 + 1$ C) $3a^2 + 1$ D) $3a^2 - 6a + 1$

Fill in the blank with one of the words or phrases listed below.

variable terms like addition	simplified combined constant multiplication	numerical coefficient algebraic expression evaluating the expression distributive	equation solution
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- 33) Replacing a variable in an expression by a number and then finding the value of the expression is called _____ for the variable. 33) _____
 A) simplified B) solution
 C) evaluating the expression D) equation

34) The number factor of a variable term is called the _____.

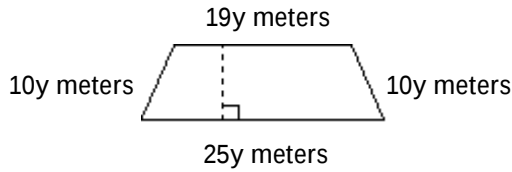
- A) algebraic expression B) numerical coefficient
C) constant D) variable

34) _____

Find the perimeter or area of the figure as indicated.

35) Find the perimeter of the trapezoid.

35) _____



- A) $35y$ m B) $190y$ m C) $25y$ m D) $64y$ m

Add the polynomials.

36) $(3a^2 - 5a + 2) + (9a - 5)$

- A) $3a^2 + 4a - 3$ B) $3a^2 + 14a + 3$ C) $7a^2 - 3$ D) $3a^2 + 8a + 7$

36) _____

37) Add $(-10x^2 - 12x + 16)$ and $(5x^2 + 8x)$.

- A) $-5x^2 - 4x + 16$ B) $-5x^2 - 4x - 16$ C) $-9x^6 + 16$ D) $-5x^4 - 4x^2 + 16$

37) _____

Write the phrase as a variable expression. Use x to represent "a number."

38) The product of -31 and the sum of a number and 4

- A) $-31x + 4$ B) $-31 + 4x$ C) $-124x$ D) $-31(x + 4)$

38) _____

Find the value of the polynomial for the given replacement value.

39) $-3x - 7$ for $x = -1$

- A) -10 B) 4 C) 10 D) -4

39) _____

40) $x^3 - 4x^2 - 9x$ for $x = 1$

- A) -14 B) -4 C) 6 D) -12

40) _____