



Algebraic Expressions

- 1** Which answer is the same expression as this
 $8(7m + 5)$

A	$8m - 56$	B	$56m - 56$
C	$8m + 56$	D	$56m + 40$
E	$m^8 + 40$	F	$56m + 8$

- 2** Which answer is the same expression as this
 $2b(7 - m)$

A	$7b + bm$	B	$9bm + 7b$
C	$14b - 2bm$	D	$b^2 + 7b$
E	$9bm + 7$	F	$14bm + 7b$

- 3** Simplify by combining like terms.
 $-9 - \frac{9}{2}x^2 + 5x + \frac{5}{2}x^2$

A	$-7x^2 + 5x - 9$
B	$-\frac{9}{2}x^2 + \frac{5}{2}x^2 + 5x - 9$
C	$-2x^2 + 5x - 9$
D	$-\frac{9}{2}x^2 + 5x - 9$

- 4** Simplify by combining like terms.
 $-3x^2 - 9x^2 - 4x - 4$

A	$-3x^2 - 9x^2 - 4x - 4$
B	$-12x^2 - 4x - 4$
C	$-3x^2 - 4x - 4$
D	$6x^2 - 4x - 4$

- 5** Simplify by combining like terms.
 $9x^2y^2 + 9y - 3x - 9x^2y + 5x^2y^2$

A	$9x^2y^2 + 5x^2y^2 - 9x^2y - 3x + 9y$
B	$9x^2y^2 - 9x^2y - 3x + 9y$
C	$4x^2y^2 - 9x^2y - 3x + 9y$
D	$14x^2y^2 - 9x^2y - 3x + 9y$

- 6** Simplify by combining like terms.
 $-8xy + 4x - 2y + 9xy - 8$

A	$-17xy + 4x - 2y - 8$
B	$-8xy + 9xy + 4x - 2y - 8$
C	$-8xy + 4x - 2y - 8$
D	$xy + 4x - 2y - 8$

- 7** What is the value of this equation
when $z = -4$, $x = 5$, $n = -2$

$$\frac{6z + 3n}{2x}$$

A	$6z - -3$	B	4
C	146	D	-146
E	-3	F	$z^6 + -3$



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- 8** Simplify by combining like terms.

$$\frac{2}{3} - 5xy + \frac{3}{2}y - 8x + \frac{7}{3}xy$$

A $-5xy - 8x + \frac{3}{2}y + \frac{2}{3}$

B $-\frac{8}{3}xy - 8x + \frac{3}{2}y + \frac{2}{3}$

C $-5xy + \frac{7}{3}xy - 8x + \frac{3}{2}y + \frac{2}{3}$

D $-\frac{22}{3}xy - 8x + \frac{3}{2}y + \frac{2}{3}$

- 9** What is the value of this equation when $d=-8$, $n=4$, $p=8$

$$\frac{7d^2 - 3p^2}{4n}$$

A	$-16d$	B	$d^7 + 16$
C	16	D	$7d - 16$
E	512	F	2

- 10** What is the value of this equation when $r=8$, $y=-7$, $m=-2$

$$\frac{3r}{2y - 6m}$$

A	$3r - -12$	B	290
C	178	D	-2
E	2	F	-12

- 11** What is the value of this equation when $z=2$, $d=4$, $b=3$

$$\frac{2z + 4b}{2d}$$

A	$2z$	B	-40
C	$z^2 + 2$	D	40
E	$-5z$	F	2

- 12** What is the value of this equation when $y=4$, $c=2$

$$2(6y - 3c)$$

A	-96	B	102
C	$y^6 + 36$	D	36
E	38	F	$36y$

- 13** What is the value of this equation when $b=3$, $x=-5$

$$2(2b - 7x)$$

A	82	B	-17
C	-18	D	$b^2 + 82$
E	$84b$	F	$2b - 82$

- 14** What is the value of this equation when $y=-5$, $n=5$

$$-(2y + 2n)^2$$

A	0	B	$y^2 + -0$
C	60	D	$-0y$
E	$0y$	F	100



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- 15** What is the value of this equation when $c=3$, $r=4$, $n=2$

$$\left(\frac{2c+3n}{3r}\right)^2$$

A	$-4c$	B	-2
C	$1c$	D	$2c-1$
E	c^2+1	F	1

- 16** What is the value of this equation when $z=4$, $b=2$, $r=5$, $d=3$

$$\frac{3z}{3b} + \frac{3r}{5d}$$

A	$3z$	B	3
C	z^3+3	D	-60
E	54	F	-3

- 17** Which answer is the same expression as this

$$3t+6$$

A	$3(t-2)$	B	$3(t+2)$
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- 18** Remove a common factor from this quadratic to make it easier to factor

$$5r^2 + 50r + 105$$

A	$5(r^2 - 10r + 21)$
B	$5(r^2 + 10r + 21)$

- 19** Which pair of terms are like terms?

$$6 + 5xy + 6xy + y + 8x$$

- 20** Which pair of terms are like terms?

$$8x^2 - 7x - 2x + 5$$

- 21** Which pair of terms are like terms?

$$-8x - x^2y - 7x^2y - 8xy + 7y$$

- 22** Which pair of terms are like terms?

$$3x + 4 - 8x$$



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23 Which pair of terms are like terms?

$$-\frac{1}{2}x + \frac{5}{2} + \frac{3}{2}x$$

24 Simplify by combining like terms.

$$\frac{8}{3}x - \frac{4}{3}x - 1$$

A $\frac{4}{3}x - 1$

B $4x - 1$

C $\frac{8}{3}x - \frac{4}{3}x - 1$

D $\frac{8}{3}x - 1$

25 Which answer is the same expression as this

$$7(z + 3)$$

A $z^7 + 21$

B $7z + 10$

C $7z - 10$

D $7z - 21$

E $7z + 21$

26 Which answer is the same expression as this

$$d(m - 2)$$

A $dm + 2$

B $m^2 + 2d$

C $dm - 2d$

D $m^2 - 2d$

E $dm - d$

F $dm + d$

27 Which answer is the same expression as this

$$x(2x - 8)$$

A $x^2 - 8x$

B $2x^2 - 8x$

C $2x^2 + 8x$

D $2x^2 - 16x$

E $2x^2 - 10x$

F $2x^2 + 8x$

28 Which answer is the same expression as this

$$(m + 6)(4m + 7)$$

A $m^2 - 42m + 31$

B $m^2 + 42m + 31$

C $4m^2 + 31m - 42$

D $7m^2 - 42m + 31$

E $4m^2 + 31m + 42$

F $31m^2 + m + 42$

29 Is the simplification correct?

$$9x^3 + \frac{1}{4}x^2 - 5x^4 + \frac{9}{4}x^2 + 9 = -5x^4 + 9x^3 + \frac{5}{2}x^2 + 9$$

A

No

B

Yes

30 Simplify by combining like terms.

$$-3x^3y - 4x^3y + 3x^4y^2 + 9y^3 + 2xy^3$$

A $3x^4y^2 - 3x^3y - 4x^3y + 2xy^3 + 9y^3$

B $3x^4y^2 - 7x^3y + 2xy^3 + 9y^3$

C $3x^4y^2 - 3x^3y + 2xy^3 + 9y^3$

D $3x^4y^2 + x^3y + 2xy^3 + 9y^3$



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31 Find the expression that best represents this sentence

Four times the difference of p and nine

A $4p - 9$

B $4 - 9p$

C $p(4 - 9)$

D $4(p + 9)$

E $4(p - 9)$

32 Find the equation that best represents this sentence

The length is five times the width decreased by two times the height.

A $l = 2w - 5h$

B $l = 5w \times 2h$

C $l = 5w + 2h$

D $l = 5w - 2h$

33 Find the equation that best represents this sentence

w is the answer when p is subtracted from y

A $p \times w = y$

B $y \times w = p$

C $y + w = p$

D $p + w = y$

E $y - p = w$

F $w - y = p$

34 Find the equation that best represents this sentence

n results from multiplying ten and y

A $\frac{y}{10} = n$

B $10 \times n = y$

C $\frac{y}{n} = 10$

D $\frac{10}{n} = y$

E $10 \times y = n$

F $\frac{10}{y} = n$

35 Find the equation that best represents this sentence

The total price is five more than the quotient of the number of items and two.

A $C = \frac{n}{2} + 5$

B $C = 2n + 5$

C $C = \frac{n}{2 + 5}$

D $C = \frac{n}{2} - 5$

36 Find the expression that best represents this sentence

Ten more than the quotient of p and seven

A $7p + 10$

B $\frac{p}{7 + 10}$

C $\frac{p}{7} + 10$

D $\frac{p}{7} - 10$