# TB(1A) Ch. 3 Introduction to Algebra
# Multiple Choice Questions

**1. [16-17 Mid-year Exam, #5]**

Which of the following is NOT a formula?

**A.** $A = 4A - 6$

**B.** $P = 2x + 2y$

**C.** $V = x^3$

**D.** $s = \frac{1}{2}(a + b + c)$

**2. [16-17 Mid-year Exam, #6]**

Which of the following is an equation?

**A.** $(2x)(3x^2)$

**B.** $5x + 1 > 21$

**C.** $y + 2x = 1$

**D.** $(2x - 1) + (x - 2)$

**3. [17-18 Standardized Test #2]**

Which of the following are equal to $-\left(\frac{a}{5}\right)b$?

I. $\frac{-ab}{5}$

II. $b\left(\frac{a}{-5}\right)$

III. $a\left(-\frac{b}{5}\right)$

**A.** I and II only **B.** I and III only

**C.** II and III only **D.** I, II and III

**4. [17-18 Standardized Test #3]**

Which of the following numbers are triangular numbers?

I. 1

II. 5

III. 10

**A.** I and II only **B.** I and III only

**C.** II and III only **D.** I, II and III

**5. [17-18 Standardized Test #4]**

The general term $T_n$ of a sequence is $\frac{n^2}{3n-5}$. Find $T_5$.

**A.** $-\frac{5}{2}$ **B.** –2

**C.** $\frac{5}{2}$ **D.** 2

**6. [18-19 Standardized Test #3]**

Simplify $4p - 10p \div 2$.

**A.** $-3p$ **B.** $-p$

**C.** 0 **D.** $9p$

**7. [18-19 Mid-year Exam, #5]**

Which of the following is not true?

**A.** $(-a)b = a(-b)$

**B.** $a + (-b) = -b + a$

**C.** $-(a + b) = -a - b$

**D.** $(-a) \div (-b) = -\frac{a}{b}$

**8. [18-19 Mid-year Exam, #13]**

Connie used the method of substitution to find the value of $ab - bc^2$ when $a = 1$, $b = -5$ and $c = -3$. Her steps are as follows:

| | When $a = 1$, $b = -5$ and $c = -3$, |
|---|---|
| 1st line | $(1)(-5) - [(-5)(-3)]^2$ |
| 2nd line | $= 5 - (+15)^2$ |
| 3rd line | $= 5 - 30$ |
| 4th line | $= -25$ |

Determine on which line Connie first made a mistake.

**A.** 1st line
**B.** 2nd line
**C.** 3rd line
**D.** 4th line

**9. [18-19 Final Exam, #6]**

Simplify $(3x - 4y + 5z) - (x - 5y - 6z)$.

**A.** $2x + y + 11z$
**B.** $2x - 9y - z$
**C.** $2x + y - z$
**D.** $2x - 9y + 11z$

**10. [19-20 Standardized test, #4]**

Simplify $-6a + 3b - 8b + 20a$.

**A.** $14a + 5b$ **B.** $-14a + 5b$
**C.** $14a - 5b$ **D.** $-14a - 5b$

**11. [19-20 Standardized test, #5]**

Which of the following is correct?

**A.** like terms: $\frac{3a}{7}$, $a$;

unlike terms: $\frac{b}{4}, -\frac{b}{5}$

**B.** like terms: $c$ , $c^2$;

unlike terms: $\frac{b}{4}$, $-\frac{b}{5}$

**C.** like terms: $\frac{3a}{7}$, $a$;

unlike terms: $\frac{d^2}{2}, -\frac{d^3}{3}$

**D.** like terms: $c$ , $c^2$;

unlike terms: $\frac{d^2}{2}, -\frac{d^3}{3}$

**12. [19-20 Mid-year, #7]**

$-5r^2s + 2rs^2 + 13sr^2 - 7s^2r =$

**A.** $-12r^2s + 15s^2r$. **B.** $-3r^2s + 6s^2r$.

**C.** $8r^2s - 9s^2r$. **D.** $8r^2s - 5s^2r$.

**13. [19-20 Mid-year, #9]**

Simplify $(6x^3 - 2x^2 - 8x) - (2x^3 - 5x^2 + x - 6)$.

**A.** $4x^3 + 3x^2 - 9x + 6$ **B.** $4x^3 - 3x^2 - 9x + 6$

**C.** $4x^3 + 7x^2 - 9x + 6$ **D.** $4x^3 - 7x^2 - 7x - 6$

**14. [19-20 Mid-year, #13]**

Given the formula of the volume $V$ cm$^3$ of a sphere with radius $r$ cm to be $V = \frac{4}{3}\pi r^3$. Find the volume of a sphere with a radius of $2\frac{1}{2}$ cm.

**A.** $\frac{4}{3}\pi$ cm$^3$ **B.** $\frac{25}{3}\pi$ cm$^3$

**C.** $\frac{65}{6}\pi$ cm$^3$ **D.** $\frac{125}{6}\pi$ cm$^3$

**15. [19-20 Mid-year, #19]**

It is given that $a$ and $b$ are negative numbers and $c$ is a positive number. Which of the following must be true?

**I.** $a^2bc$ is negative.

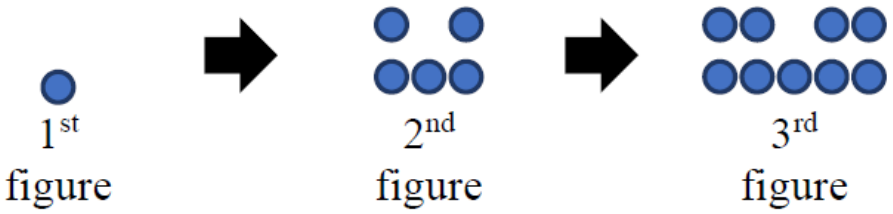
**II.** $\dfrac{a+b}{a-c}$ is positive.

**III.** $\dfrac{a-b}{b^2-c}$ is positive.

**A.** I and II only **B.** I and III only
**C.** II and III only **D.** I, II and III

**16. [20-21 Mid-year, #5]**

Consider the following figures.




According to the above pattern, find the number of dots in the 6th figure.

**A.** 17
**B.** 21
**C.** 25
**D.** 29

**17. [20-21 Mid-year, #6]**

Find the value of the polynomial $a^2+5a-1$ when $a=-1$.

**A.** $-7$
**B.** $-5$
**C.** $-3$
**D.** $-1$

**18. [20-21 Mid-year, #9]**

If $a_n$ is the $n^{th}$ term of a sequence and $a_n = 20 - n^2$, find $a_3 - 4a_5$.

**A.** $-31$

**B.** $-9$

**C.** $9$

**D.** $31$

**19. [20-21 Final, #1]**

Which of the following is (are) a pair of like terms?

I. –3, 2

II. $\frac{2a}{3}$, –5$a$

III. 2$x$, 3$x^2$

**A.** II only

**B.** III only

**C.** I and II only

**D.** I, II and III

**20. [20-21 Final Exam, #14]**

There are 3 consecutive even numbers in which $M$ is the largest.

Find the sum of these three numbers.

**A.** 3$M$ – 6

**B.** 3$M$ – 3

**C.** 3$M$ + 6

**D.** 3$M$ + 3

**~ End ~**