# TB(1A) Ch. 2 Introduction to Algebra
# Multiple Choice Questions

**1. [12-13 Standardized Test 1]**

It is given that $-8$ and $-4$ are the $5^{th}$ and the $6^{th}$ term of a geometric sequence respectively. Find the $7^{th}$ term of the sequence.

**A.** $0$ **B.** $-2$
**C.** $-12$ **D.** $-16$

**2. [12-13 Standardized Test 1]**

If the smallest number of three consecutive odd numbers is $2n-1$, find the sum of the three numbers.

**A.** $2n$ **B.** $6n$
**C.** $2n+1$ **D.** $6n+3$

**3. [12-13 Mid-year Exam Q7]**

Represent the word phrase 'Subtract *a* from *b*, then multiply half of the difference by *c*' by an algebraic expression.

**A.** $b-\frac{ac}{2}$ **B.** $a-\frac{bc}{2}$
**C.** $\frac{(a-b)c}{2}$ **D.** $\frac{(b-a)c}{2}$

**4. [12-13 Mid-year Exam Q8]**

May bought *y* boxes of chocolates with \$54. There were 12 chocolates in each box. Express the price of each chocolate in terms of *y*.

**A.** $\$\frac{9}{2y}$ **B.** $\$\frac{2}{9y}$
**C.** $\$\frac{9y}{2}$ **D.** $\$\frac{2y}{9}$

**5. [12-13 Mid-year Exam Q15]**

By using the method of substitution, which of the following is the solution of the equation $k^2-4k=-4$?

**A.** $k=-2$ **B.** $k=0$
**C.** $k=\frac{4}{3}$ **D.** $k=2$

**6. [12-13 Mid-year Exam Q16]**

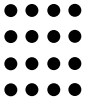
Which of the following is the general term of the sequence 3, 8, 15, 24, … ?

**A.** $n+5$ **B.** $2n+1$

**C.** $5n-2$ **D.** $n(n+2)$

**7. [12-13 Mid-year Exam Q17]**

According to the following patterns, what is the number of dots in Figure 5?

|  |  |  |  | ? |
|---|---|---|---|---|
| Figure 1 | Figure 2 | Figure 3 | Figure 4 | Figure 5 |

**A.** 10 **B.** 18

**C.** 25 **D.** 32

**8. [12-13 Final Exam Q2]**

Which of the following is true?

**A.** $a\times(bc)=ab\times ac$

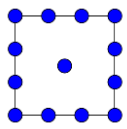
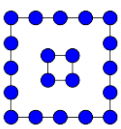
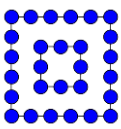
**B.** $-a(b-c)=-ab-ac$

**C.** $-a(b+c)=-(ab+ac)$

**D.** $ab+ba$ cannot be simplified.

**9. [12-13 Final Exam Q18]**

According to the following patterns, what is the number of dots in Figure 6?

|  Figure 1 |  Figure 2 |  Figure 3 | … | ? Figure 6 |
|---|---|---|---|---|

**A.** 52 **B.** 56

**C.** 60 **D.** 64

**10. [13-14 Standardized Test 1]**

Which of the following is a formula?

**A.** $\frac{FM}{a}$

**B.** $x=2$

**C.** $P=4a$

**D.** $y=2y+1$

**11. [13-14 Standardized Test 1]**

Which of the following algebraic expressions represents the word phrase "Divide *r* by s, and then minus the product of 2*p* and *q*"?

**A.** $\frac{r}{s} - 2pq$

**B.** $\frac{r - 2pq}{s}$

**C.** $2pq - \frac{r}{s}$

**D.** $q\left(\frac{r}{s} - 2p\right)$

**12. [13-14 Standardized Test 1]**

Simplify $11x \times 4 - (4x - 46) \div 6$.

**A.** $\frac{130x}{3} + 23$

**B.** $\frac{130x + 23}{3}$

**C.** $7x + \frac{27}{6}$

**D.** $7x + \frac{71}{3}$

**13. [13-14 Mid-year Exam]**

Which of the following is an algebraic equation in one unknown?

**A.** $x - 1$ **B.** $xy = 4$

**C.** $x - 5 = y$ **D.** $1 - x = \frac{3x}{2}$

**14. [13-14 Mid-year Exam]**

Find the general term of the sequence 11, 21, 31, 41, … .

**A.** $10 + n$ **B.** $1 + 10n$

**C.** $11 + n$ **D.** $11 + 10n$

**15. [13-14 Mid-year Exam]**

Which of the following algebraic expressions is equal to $(-x)^6$?

**A.** $(-x)(6)$

**B.** $x \cdot x \cdot x \cdot x \cdot x \cdot x$

**C.** $-x \cdot x \cdot x \cdot x \cdot x \cdot x$

**D.** $-x - x - x - x - x - x$

**16. [13-14 Mid-year Exam]**

Maria has 10 stamps. Their values are either \$1.7 or \$2.7 each. If there are $x$ stamps of \$2.7, express the total value of the stamps in terms of $x$.

**A.** $\$(17-x)$ **B.** $\$(17+x)$
**C.** $\$(10x-17)$ **D.** $\$(10x+17)$

**17. [13-14 Mid-year Exam]**

Which of the following sequences include(s) 12?

I. –16, –15, –14, –13, …
II. 40, 36, 32, 28, …
III. 1, 2, 4, 8, …

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

**18. [13-14 Mid-year Exam]**

$(3x+y)^2-(3x-y)^2=$

**A.** 0 **B.** $2y^2$
**C.** $6xy$ **D.** $12xy$

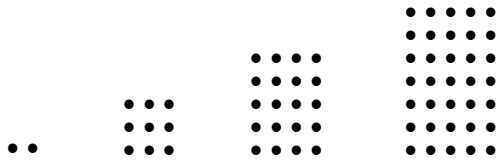
**19. [14-15 Mid-year Exam Q11]**

Which of the following statements is false?

**A.** The sum of an even number and an odd number must be odd.
**B.** The difference between two odd numbers must be even.
**C.** The product of four odd numbers must be odd.
**D.** The product of a number and the number itself must be even.

**20. [14-15 Mid-year Exam Q17]**

The following shows a sequence of figures. The number of dots in the 1st figure is 2. The number of dots in the $(n+1)$th figure is formed by adding $(4n+3)$ dots to the number of dots in the $n$th figure. Find the number of dots in the 10th figure.



1st 2nd 3rd 4th

**A.** 190 **B.** 209
**C.** 210 **D.** 231

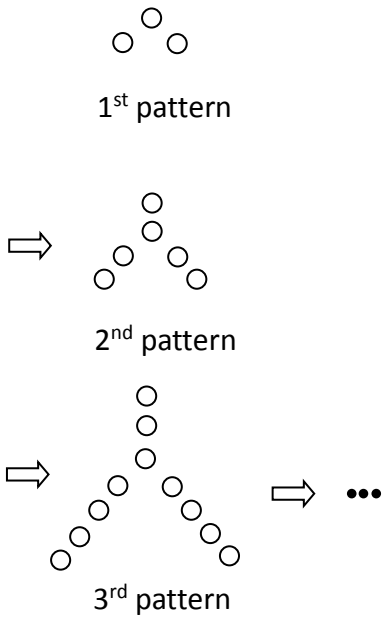
**21. [14-15 Mid-year Exam]**

Express the word phrase 'subtract the sum of $y$ and 2 from the product of $x$ and 3' by an algebraic expression.

**A.** $3x-(y+2)$
**B.** $3x-y+2$
**C.** $x-(3y+2)$
**D.** $x-3y+2$

**22. [14-15 S.6 Mock Exam #10]**

In the figure, the 1st pattern consists of 3 dots. For any positive integer $n$, the $(n+1)$th pattern is formed by adding $2n+1$ dots to the $n$th pattern. Find the number of dots in the 7th pattern.



1st pattern

2nd pattern

3rd pattern

**A.** 21
**B.** 24
**C.** 36
**D.** 51

**23. [14-15 Final Exam #2]**

Which of the following sequences has the general term of $\frac{n}{2n+1}$?

**A.** $\frac{1}{3}, \frac{2}{5}, \frac{3}{7}, \frac{4}{9}, \frac{5}{11}, \ldots$
**B.** $\frac{1}{3}, \frac{3}{7}, \frac{5}{11}, \frac{7}{15}, \frac{9}{19}, \ldots$
**C.** $\frac{2}{5}, \frac{4}{7}, \frac{6}{9}, \frac{8}{11}, \frac{10}{13}, \ldots$
**D.** $\frac{2}{5}, \frac{4}{9}, \frac{6}{13}, \frac{8}{17}, \frac{10}{21}, \ldots$

**24. [15-16 Mid-year Exam #3]**

Chloe was $n$ years old 4 years ago. If her father's age is now 3 times her age, find her father's age 4 years ago.

**A.** $3n$

**B.** $3(n-4)$

**C.** $3(n+4)$

**D.** $3(n+4)-4$

**25. [15-16 Mid-year Exam #14]**

Which of the following is the general term of the sequence 0, 2, 5, 9, 14, …?

**A.** $2n-2$

**B.** $3n-1$

**C.** $\dfrac{n(n-1)}{2}$

**D.** $\dfrac{n(n+1)}{2}-1$

**26. [15-16 Mid-year Exam #15]**

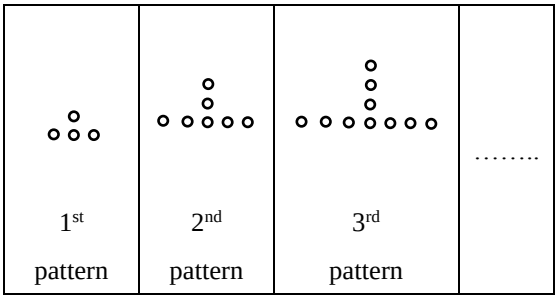
Which of the following is a term of the sequence $\dfrac{2}{3}, \dfrac{5}{7}, \dfrac{10}{11}, \dfrac{17}{15}, \dfrac{26}{19}, \ldots$?

**A.** $\dfrac{35}{23}$ **B.** $\dfrac{50}{27}$

**C.** $\dfrac{66}{31}$ **D.** $\dfrac{81}{35}$

**27. [15-16 Final Exam, #3]**

According to the following patterns, what is the number of dots in the 6th pattern?




**A.** 16 **B.** 19

**C.** 22 **D.** 25

**28. [15-16 Final Exam, #7]**

What is the value of the polynomial $x^2 - 3x + 5$ when $x = -1$?

**A.** 1 **B.** 7

**C.** 9 **D.** 10

**29. [16-17 Mid-year Exam, #4]**

Which of the following does the sequence 1, 3, 6, 10, … belong to?

**A.** Arithmetic sequence
**B.** Geometric sequence
**C.** Fibonacci sequence
**D.** Triangular numbers

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

**31. [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.** $(2x - 1) + (x - 2)$

**32. [16-17 Mid-year Exam, #16]**

Consider the polynomial $-2t^3 - t^2 + 7$. Find the value of the polynomial when $t = -\frac{1}{2}$.

**A.** $\frac{77}{12}$ **B.** $\frac{13}{2}$
**C.** $7$ **D.** $\frac{15}{2}$

**33. [16-17 Final Exam, #15]**

Which of the following represents the *n*th term of the sequence $-\frac{3}{4}, -\frac{4}{5}, -\frac{5}{6}, -\frac{6}{7}, \ldots$ ?

**A.** $(-1)^n \frac{n+1}{n+2}$ **B.** $(-1)^n \frac{n+2}{n+3}$
**C.** $-\frac{n+1}{n+2}$ **D.** $-\frac{n+2}{n+3}$

**~ End ~**