# Math 7 Unit 1 Test

Multiple Choice
Identify the choice that best completes the statement or answers the question.

_____ 1. Which number is divisible by 4 **and** by 5?
   210, 630, 420, 315
   a. 315   b. 420   c. 210   d. 630

_____ 2. Which number is divisible by 3?
   127, 124, 123, 130
   a. 124   b. 127   c. 130   d. 123

_____ 3. Which number is divisible by 9?
   244, 242, 252, 240
   a. 252   b. 244   c. 240   d. 242

_____ 4. Evaluate the expression by replacing a with 12.
   $a + 5$
   a. 17   b. 60   c. 7   d. 3

_____ 5. If n represents any term number, write a relation for the term.

Term Number		1	2	3	4	5	6
Term		11	22	33	44	55	66

   a. $11n$ b. $2n + 11$ c. $2n$ d. $n + 11$

_____ 6. There are n students in a class. Write a relation for the total number of crayons if each student is given 13 crayons.
   a. $13n + 13$ b. $n + 13$ c. $13n$ d. $\dfrac{n}{13}$

_____ 7. Write a relation for the perimeter of the rectangle with length $(n + 2)$ cm and width n cm.

n

$n + 2$
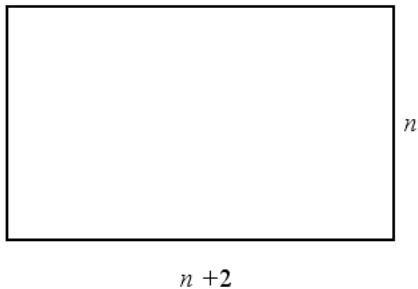
   a. $(4n + 2)$ cm   b. $(2n + 2)$ cm   c. $n(n + 2)$ cm   d. $(4n + 4)$ cm

_____ 8. Each ticket for a ride at the fair costs \$4. There are n students in the group and each student buys 9 tickets. Write a relation for the total cost of tickets for the group.
   a. \$13n   b. \$9n   c. \$36n   d. \$(n + 13)

____ 9. Complete the table.

Input p	1	2	3	4	5
Output $p + 6$					

a.

Input p	1	2	3	4	5
Output $p + 6$	6	7	8	9	10

b.

Input p	1	2	3	4	5
Output $p + 6$	7	12	18	24	30

c.

Input p	1	2	3	4	5
Output $p + 6$	6	12	18	24	30

d.

Input p	1	2	3	4	5
Output $p + 6$	7	8	9	10	11

____ 10. Complete the table.

Input p	1	2	3	4	5
Output $p + 21$					

a.

Input p	1	2	3	4	5
Output $p + 21$	22	42	63	84	105

b.

Input p	1	2	3	4	5
Output $p + 21$	22	23	24	25	26

c.

Input p	1	2	3	4	5
Output $p + 21$	21	42	63	84	105

d.

Input p	1	2	3	4	5
Output $p + 21$	21	22	23	24	25

____ 11. Use algebra. Write a relation for the Input/Output table.

Input n	1	2	3	4	5
Output	20	40	60	80	100

a. $19n$ b. $n + 19$ c. $20 + n$ d. $20n$

____ 12. Complete the Input/Output table.

Input x	1	2	3	4	5
Output $x + 6$					

a.

Input x	1	2	3	4	5
Output $x + 6$	7	8	9	10	11

b.

Input x	1	2	3	4	5
Output $x + 6$	12	18	24	30	36

c.

Input x	1	2	3	4	5
Output $x + 6$	6	12	18	24	30

d.

Input x	1	2	3	4	5
Output $x + 6$	6	7	8	9	10

_____ 13. Complete the Input/Output table.

Input q	1	2	3	4	5
Output $13q - 7$					

a.

Input q	1	2	3	4	5
Output $13q - 7$	6	19	32	45	58

b.

Input q	1	2	3	4	5
Output $13q - 7$	13	7	8	9	10

c.

Input q	1	2	3	4	5
Output $13q - 7$	19	30	41	52	63

d.

Input q	1	2	3	4	5
Output $13q - 7$	19	32	45	58	71

____ 14. Complete the Input/Output table.

Input x	1	2	3	4	5
Output $15 - 2x$					

a.

Input x	1	2	3	4	5
Output $15 - 2x$	13	11	9	7	5

b.

Input x	1	2	3	4	5
Output $15 - 2x$	15	12	10	8	6

c.

Input x	1	2	3	4	5
Output $15 - 2x$	13	11	9	7	5

d.

Input x	1	2	3	4	5
Output $15 - 2x$	11	9	7	5	3

_____ 15. Which graph shows how $2x + 3$ is related to x?

Graph P

Graph Q
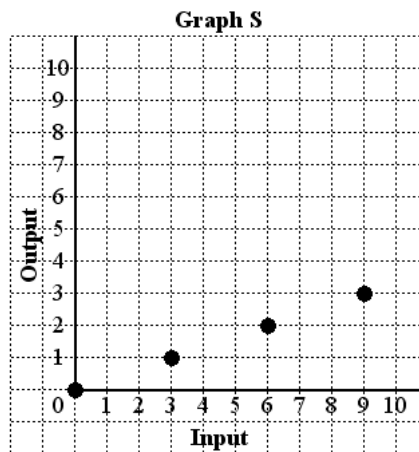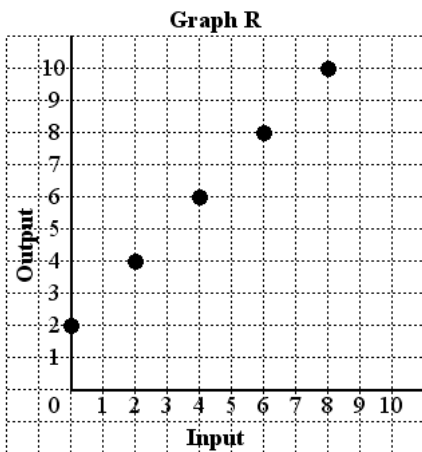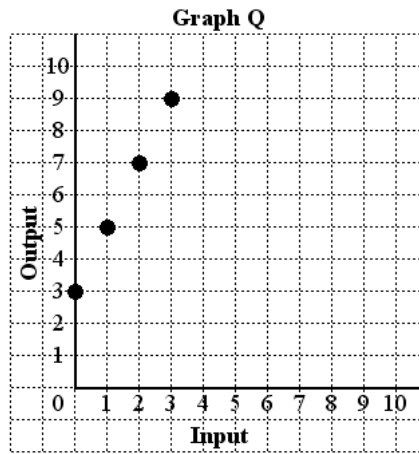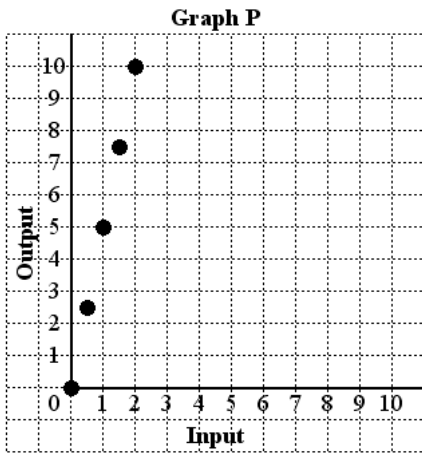
Graph R

Graph S

a. Graph P   b. Graph R   c. Graph S   d. Graph Q

_____ 16. A coach has 16 granola bars and gives 2 bars to each player. Write a relation to show how the number of granola bars that remain is related to the number of players, m.

a. $14m$ b. $16 - 2m$ c. $\dfrac{14}{m}$ d. $\dfrac{16}{2m}$

____ 17. Write an equation for the sentence.
Eleven more than a number is 18.
   a. $n - 11 = 18$ b. $11 - n = 18$ c. $n + 11 = 18$ d. $11n = 18$

____ 18. Write an equation for the sentence.
A number divided by 3 is 5.
   a. $n - 3 = 5$ b. $\dfrac{n}{3} = 5$ c. $\dfrac{3}{n} = 5$ d. $3 - n = 5$

____ 19. Write an equation for "I subtract 13 from a number. The answer is 23."
   a. $\dfrac{n}{13} = 23$ b. $13 - n = 23$ c. $n + 13 = 23$ d. $n - 13 = 23$

____ 20. Write an equation for the sentence.
Two added to 7 times a number is 79.
   a. $2 - 7x = 79$ c. $2 + 7x = 79$
   b. $2x = 79 + 7$ d. $2x - 7 = 79$

____ 21. Write an equation for "I multiply a number by 4, then add 5. The answer is 17."
   a. $20n = 17$ b. $9n = 17$ c. $4n + 5 = 17$ d. $5n + 4 = 17$

____ 22. Use tiles to solve the equation.
$5 + x = 15$
   a. 3   b. 20   c. 75   d. 10

____ 23. Use tiles to solve the equation.
$2 + x = 10$
   a. 6   b. 8   c. 5   d. 12

____ 24. Write an equation for the sentence.
The sum of 11 and a number is 22.
   a. $11 - x = 22$ b. $11x = 22$ c. $11 + x = 22$ d. $22 + x = 11$

____ 25. Let one white square represent $+1$ and one white rectangle represent x.
Solve the equation modelled by this set of tiles.
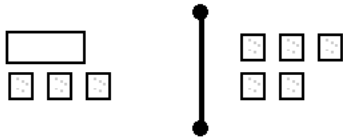
   a. $x = 2$ b. $x = 1$ c. $x = 7$ d. $x = 3$

Math 7 Unit 1 Test
Answer Section

MULTIPLE CHOICE

1. ANS: B   PTS: 1   DIF: Moderate   REF: 1.1 Patterns in Division
      LOC: 7.N1   TOP: Number   KEY: Conceptual Understanding
2. ANS: D   PTS: 1   DIF: Easy   REF: 1.2 More Patterns in Division
      LOC: 7.N1   TOP: Number   KEY: Procedural Knowledge
3. ANS: A   PTS: 1   DIF: Easy   REF: 1.2 More Patterns in Division
      LOC: 7.N1   TOP: Number   KEY: Procedural Knowledge
4. ANS: A   PTS: 1   DIF: Easy   REF: 1.3 Algebraic Expressions
      LOC: 7.PR5   TOP: Patterns and Relations (Variables and Equations)
      KEY: Procedural Knowledge
5. ANS: A   PTS: 1   DIF: Easy   REF: 1.4 Relationships in Patterns
      LOC: 7.PR1   TOP: Patterns and Relations (Patterns)   KEY: Procedural Knowledge
6. ANS: C   PTS: 1   DIF: Easy   REF: 1.4 Relationships in Patterns
      LOC: 7.PR1   TOP: Patterns and Relations (Patterns)   KEY: Conceptual Understanding
7. ANS: D   PTS: 1   DIF: Moderate   REF: 1.4 Relationships in Patterns
      LOC: 7.PR1   TOP: Patterns and Relations (Patterns)   KEY: Conceptual Understanding
8. ANS: C   PTS: 1   DIF: Moderate   REF: 1.4 Relationships in Patterns
      LOC: 7.PR1   TOP: Patterns and Relations (Patterns)   KEY: Conceptual Understanding
9. ANS: D   PTS: 1   DIF: Easy
      REF: 1.5 Patterns and Relationships in Tables   LOC: 7.PR2 |7.PR5
      TOP: Patterns and Relations (Patterns, Variables and Equations)
      KEY: Procedural Knowledge
10. ANS: B   PTS: 1   DIF: Easy
      REF: 1.5 Patterns and Relationships in Tables   LOC: 7.PR2 |7.PR5
      TOP: Patterns and Relations (Patterns, Variables and Equations)
      KEY: Procedural Knowledge
11. ANS: D   PTS: 1   DIF: Easy
      REF: 1.5 Patterns and Relationships in Tables   LOC: 7.PR2 |7.PR5
      TOP: Patterns and Relations (Patterns, Variables and Equations)
      KEY: Conceptual Understanding
12. ANS: A   PTS: 1   DIF: Easy   REF: 1.6 Graphing Relations
      LOC: 7.PR1|7.PR2|7.PR5
      TOP: Patterns and Relations (Patterns, Variables and Equations)
      KEY: Procedural Knowledge
13. ANS: A   PTS: 1   DIF: Moderate   REF: 1.6 Graphing Relations
      LOC: 7.PR1|7.PR2|7.PR5
      TOP: Patterns and Relations (Patterns, Variables and Equations)
      KEY: Procedural Knowledge
14. ANS: A   PTS: 1   DIF: Moderate   REF: 1.6 Graphing Relations
      LOC: 7.PR1|7.PR2|7.PR5
      TOP: Patterns and Relations (Patterns, Variables and Equations)
      KEY: Procedural Knowledge
15. ANS: D   PTS: 1   DIF: Moderate   REF: 1.6 Graphing Relations
      LOC: 7.PR1|7.PR2|7.PR5

       TOP: Patterns and Relations (Patterns, Variables and Equations)
       KEY: Conceptual Understanding

16. ANS: B   PTS: 1   DIF: Moderate   REF: 1.6 Graphing Relations
       LOC: 7.PR1   TOP: Patterns and Relations (Patterns)   KEY: Problem-solving Skills

17. ANS: C   PTS: 1   DIF: Easy   REF: 1.7 Reading and Writing Equations
       LOC: 7.PR3|7.PR6|7.PR7   TOP: Patterns and Relations (Variables and Equations)
       KEY: Conceptual Understanding

18. ANS: B   PTS: 1   DIF: Easy   REF: 1.7 Reading and Writing Equations
       LOC: 7.PR3|7.PR7   TOP: Patterns and Relations (Variables and Equations)
       KEY: Conceptual Understanding

19. ANS: D   PTS: 1   DIF: Easy   REF: 1.7 Reading and Writing Equations
       LOC: 7.PR3|7.PR6|7.PR7   TOP: Patterns and Relations (Variables and Equations)
       KEY: Conceptual Understanding

20. ANS: C   PTS: 1   DIF: Moderate   REF: 1.7 Reading and Writing Equations
       LOC: 7.PR3|7.PR7   TOP: Patterns and Relations (Variables and Equations)
       KEY: Conceptual Understanding

21. ANS: C   PTS: 1   DIF: Moderate   REF: 1.7 Reading and Writing Equations
       LOC: 7.PR3|7.PR7   TOP: Patterns and Relations (Variables and Equations)
       KEY: Problem-solving Skills

22. ANS: D   PTS: 1   DIF: Easy
       REF: 1.8 Solving Equations Using Algebra Tiles   LOC: 7.PR3|7.PR6|7.PR7
       TOP: Patterns and Relations (Variables and Equations)   KEY: Conceptual Understanding

23. ANS: B   PTS: 1   DIF: Easy
       REF: 1.8 Solving Equations Using Algebra Tiles   LOC: 7.PR3|7.PR6|7.PR7
       TOP: Patterns and Relations (Variables and Equations)   KEY: Conceptual Understanding

24. ANS: C   PTS: 1   DIF: Easy
       REF: 1.8 Solving Equations Using Algebra Tiles   LOC: 7.PR3|7.PR6|7.PR7
       TOP: Patterns and Relations (Variables and Equations)   KEY: Conceptual Understanding

25. ANS: A   PTS: 1   DIF: Easy
       REF: 1.8 Solving Equations Using Algebra Tiles   LOC: 7.PR3|7.PR6|7.PR7
       TOP: Patterns and Relations (Variables and Equations)   KEY: Procedural Knowledge

Unit 2

Multiple Choice
Identify the choice that best completes the statement or answers the question.

_____ 1. Let one white tile represent +1 and one black tile represent −1.
You have 12 black tiles. What tiles do you need to model 0?
a. 11 black   b. 12 white   c. 12 black   d. 11 white

_____ 2. Let one white tile represent +1 and one black tile represent −1.
You have 8 white tiles and 6 black tiles. What additional tiles do you need to model −2?
a. 4 white   b. 2 black   c. 4 black   d. 2 white

_____ 3. Let one white tile represent +1 and one black tile represent −1.