

*P.I. A.A.1: Translate a quantitative verbal phrase into an algebraic expression*

1. Which variable expression below means the quotient of 19 times a number and 24?

[A]  $5x \div 43$                       [B]  $24x \div 19$   
[C]  $19x \div 24$                       [D]  $43x \div 5$

2. Write as a variable expression: a number more than 98

[A]  $98x$                               [B]  $x + 98$   
[C]  $x - 98$                               [D]  $98 - x$

3. Write as a variable expression: a number less 30

[A]  $x + 30$                               [B]  $x - 30$   
[C]  $30 - x$                               [D]  $30x$

4. Write as a variable expression: a number decreased by 37

[A]  $x + 37$                               [B]  $x - 37$   
[C]  $37 - x$                               [D]  $37x$

5. Write as a variable expression: a number increased by 24

[A]  $24 - x$                               [B]  $24x$   
[C]  $x - 24$                               [D]  $x + 24$

6. Write as a variable expression: a number times 11

[A]  $x + 11$                               [B]  $11x$   
[C]  $x - 11$                               [D]  $11 - x$

7. Write an algebraic expression for 17 times the sum of a number and 8.

8. If the product of 15 and 60 is divided by the sum of 15 and 30, what is the quotient?

9. If the product of 12 and 80 is divided by the sum of 12 and 36, what is the quotient?

10. If the product of 20 and 60 is divided by the sum of 20 and 60, what is the quotient?
11. If the product of 16 and 40 is divided by the sum of 16 and 48, what is the quotient?
12. If the product of 20 and 40 is divided by the sum of 20 and 60, what is the quotient?
13. Marcus is 12 years old. Arlene is 8 years old. Write a variable expression for Arlene's age using Marcus' age as  $M$ .
- [A]  $M + 8$                       [B]  $M - 4$   
[C]  $M + 4$                       [D]  $M - 12$
14. Matt and Carla each spent \$100 at the mall. Together they bought five sweaters and two pairs of pants. Let  $s$  represent the cost of a sweater and  $p$  the cost of a pair of pants. Which of the following variable expressions represents the total cost of their purchases?
- [A]  $100 - 5s$                       [B]  $100 - 2p$   
[C]  $5s + 2p$                       [D]  $7sp$
15. If a major league baseball player chews 50 pieces of gum per game, write a variable expression to show how many pieces of gum he might chew in " $n$ " games.
16. Refer to the chart below. Use the variable  $m$  to represent the percent of employees in retailing covered by a health plan. Write an expression, using  $m$ , to represent the percent of employees covered in transportation/communications.
- | % Employees Covered by Their Employers' Health Care Plan<br>(companies of 200 or more workers) |     |
|--|-----|
| High Technology  | 89% |
| Manufacturing  | 82% |
| Transportation / Communications  | 78% |
| Retailing  | 39% |

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[1] C

[2] B

[3] B

[4] B

[5] D

[6] B

[7]  $17(n+8)$

[8] 20

[9] 20

[10] 15

[11] 10

[12] 10

[13] B

[14] C

[15]  $50n$

[16]  $2m$