Variable Quantities (Q)

1. Heather is at the amusement park for 9 hours. The number of rides she goes on depends on how long the line is for each ride. Is the amount of time she spends at the park a variable quantity?

2. An office manager is renting a local hall for an upcoming event. The hall costs $140 and the food costs $14 per person. If the number of people who will attend is unknown, is the number of people who will attend a variable quantity?

3. Lisa takes the same route to work each day. She drives 17 miles to work but the time it takes varies each day. There are 7 stoplights on the drive that she must stop at when red. She also pays $3 for toll. Which of the quantities listed are variable quantities?

(1) The number of miles she drives to work

(2) The amount of time the drive to work takes

(3) The amount of money spent of tolls each day

(4) The number of stoplights she stops at

Variable Quantities (A)

1. No, She only will spend 9 hours at the amusement park.

2. Yes, if the number of people who will attend is unknown then there could be 5 people attending or 500. This will change.

3. (2) The amount of time the drive to work takes
   (4) The number of stoplights she stops at.

Algebraic or Numerical Expressions (Q)

1. Which of the following are algebraic expressions?

$$50x + 3y + 106 \qquad 35 + 30(6b) \qquad 230(220)$$

2. Which of the following are numerical expressions?

$$(19 - 2) + 5(40 \div 20) \qquad xy + z \qquad 65ab$$

3. Which of the following are *not* numerical expressions

$$20 + 5m \qquad 3xy - 7z \qquad 17(44 \div 22) + 50(40)$$

Algebraic or Numerical Expressions (A)

1. $50x + 3y + 106$ $\qquad$ $35 + 30(6b)$

2. $(19 - 2) + 5(40 \div 20)$

3. $20 + 5m$ $\qquad$ $3xy - 7z$

Writing Expressions (Q)

1. The length of a rectangle is 5 more feet than the width. If the width is represented by w, write an algebraic expression in terms of w that represents the length.

2. It costs $175 to rent a room at an event center. The event center charges an additional $11 per person for food. Write an algebraic expression for the total cost of an event for n people.

3. Jesse buys some T-shirts and shorts at the local clothing store. The T-shirts cost $12 each and the shorts cost $20 each. If x represents the number of T-shirts purchased and y represents the number of shorts purchased write an algebraic expression that represents the total cost of the purchase in terms of x and y.

Writing Expressions (A)

1. $w + 5$

2. $175 + 11n$

3. $12x + 20y$

Terms, Variables, Coefficients, Constants (Q)

- Identify how many terms
- Identify ONE Variable, Coefficient, and Constant Term

1. $3(2x+7) \div 4x - 12$

2. $3x + 4y + 20$

3. $120 - 5x + (3s - 5) - 6p$

Terms, Variables, Coefficients, Constants (A)

1. 3 Terms
   Variables: x
   Coefficients: 3 and 4
   Constant Term: 12

2. 3 Terms
   Variables: x and y
   Coefficients: 3 and 4
   Constant Term: 20

3. 4 Terms
   Variables: $x, s,$ and p
   Coefficients: 5 and 6
   Constant Term: 120

Order of Operations(Q)

1. $4^2 + 9 - 10 \div 2$

2. $3(14 - 2) \div 6^2$

3. $3 \bullet 2^3 - (8 + 2)$

Order of Operations(A)

1. 20

2. 1

3. 14

Identify and Evaluate Exponents (Q)

- Write each expression using an exponent
- Find the value of each expression

1. $(2)(2)(2)(2)(2)$

2. $4 \cdot 4 \cdot 4 \cdot 4$

3. $10 \cdot 10 \cdot 10$

Identify and Evaluate Exponents (A)

1. $$2^5 = 32$$

2. $$4^4 = 256$$

3. $$10^3 = 1000$$

Evaluating Expressions (Q)

1. Evaluate when *a=4* and *b=6*

$$5a - 3b$$

2. Evaluate when *m=3* and *p=6*

$$4m^2 \div \left(8 - p\right)$$

3. Evaluate when *d=6* and *g=3*

$$dg^2 + \left(g^2 - 7\right)$$

Evaluating Expressions (A)

1.   2

2.   18

3.   56

Expressions from Word Phrases (Q)

1. The difference of 6 times a number and 5

2. The quotient of the quantity x plus 4 and 16

3. 15 subtracted from t

Expressions from Word Phrases (A)

1. $6x - 5$

2. $(x + 4) \div 16$

3. $t - 15$