

1.

| Skills  | Outcome/Standard                  | TIMSS Cognitive Domain |
|---------|-----------------------------------|------------------------|
| Algebra | Calculation with direct variation | Applying               |

The total cost for filling your car varies directly with the number of gallons of gasoline you are purchasing.

If a gallon of gasoline costs AED 2.25, how many gallons could you purchase for AED 18?

2.

| Skills  | Outcome/Standard                   | TIMSS Cognitive Domain |
|---------|------------------------------------|------------------------|
| Algebra | Calculation with inverse variation | Applying               |

On a string instrument, the length of the string varies inversely as the frequency of its vibrations.  
An 11-inch string has a frequency of 400 cycles per second.

Find the constant of proportionality and then find the frequency of a 10-inch string.

3.

| Skills  | Outcome/Standard                  | TIMSS Cognitive Domain |
|---------|-----------------------------------|------------------------|
| Algebra | Calculation with direct variation | Applying               |

In the outer space, the distance an object travels varies directly with the amount of time that it travels.

If the asteroid travels 3000 miles in 6 hours, what is the constant of variation?

4.

| Skills  | Outcome/Standard                  | TIMSS Cognitive Domain |
|---------|-----------------------------------|------------------------|
| Algebra | Calculation with direct variation | Applying               |

$y$  is directly proportional to  $x$ . If  $y = 30$  when  $x = 6$ , find the value of  $x$  when  $y = 45$ .

5.

| Skills  | Outcome/Standard                   | TIMSS Cognitive Domain |
|---------|------------------------------------|------------------------|
| Algebra | Calculation with inverse variation | Applying               |

If  $g$  is inversely proportional to  $w$  and when  $g = 4$ ,  $w = 9$ , then form an equation relating  $g$  to  $w$ .