

**A.M.2: Conversions 1: Solve problems involving conversions within measurement systems, given the relationship between the units**

- 1 On a certain day in Toronto, Canada, the temperature was  $15^{\circ}$  Celsius (C). Using the formula  $F = \frac{9}{5}C + 32$ , Peter converts this temperature to degrees Fahrenheit (F). Which temperature represents  $15^{\circ}\text{C}$  in degrees Fahrenheit?
  - 1)  $-9$
  - 2)  $35$
  - 3)  $59$
  - 4)  $85$
- 2 The formula  $C = \frac{5}{9}(F - 32)$  can be used to find the Celsius temperature (C) for a given Fahrenheit temperature (F). What Celsius temperature is equal to a Fahrenheit temperature of  $77^{\circ}$ ?
  - 1)  $8^{\circ}$
  - 2)  $25^{\circ}$
  - 3)  $45^{\circ}$
  - 4)  $171^{\circ}$
- 3 If the temperature in Buffalo is  $23^{\circ}$  Fahrenheit, what is the temperature in degrees Celsius? [Use the formula  $C = \frac{5}{9}(F - 32)$ .]
  - 1)  $-5$
  - 2)  $5$
  - 3)  $-45$
  - 4)  $45$
- 4 The formula for converting temperatures in degrees Celsius to degrees Fahrenheit is  $F = \frac{9}{5}C + 32$ . If the temperature is  $20^{\circ}\text{C}$ , what is the temperature in degrees Fahrenheit?
  - 1)  $68$
  - 2)  $43.1$
  - 3)  $33.8$
  - 4)  $4$
- 5 The formula for changing Celsius (C) temperature to Fahrenheit (F) temperature is  $F = \frac{9}{5}C + 32$ . Calculate, to the *nearest degree*, the Fahrenheit temperature when the Celsius temperature is  $-8$ .
- 6 The formula  $C = \frac{5}{9}(F - 32)$  is used to convert Fahrenheit temperature,  $F$ , to Celsius temperature,  $C$ . What temperature, in degrees Fahrenheit, is equivalent to a temperature of  $10^{\circ}$  Celsius?

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**Answer Section**

1 ANS: 3

$$F = \frac{9}{5}C + 32 = \frac{9}{5}(15) + 32 = 59$$

REF: 010901ia

2 ANS: 2

$$C = \frac{5}{9}(F - 32) = \frac{5}{9}(77 - 32) = 25$$

REF: 089908a

3 ANS: 1

$$C = \frac{5}{9}(F - 32) = \frac{5}{9}(23 - 32) = -5$$

REF: 060407a

4 ANS: 1

$$F = \frac{9}{5}C + 32 = \frac{9}{5}(20) + 32 = 68$$

REF: 080804a

5 ANS:

$$18. F = \frac{9}{5}C + 32 = \frac{9}{5}(-8) + 32 = 17.6 \approx 18$$

REF: 060021a

6 ANS:

$$C = \frac{5}{9}(F - 32)$$

$$50. 10 = \frac{5}{9}(F - 32)$$

$$18 = F - 32$$

$$F = 50$$

REF: 010734a