

**N.Q.A.1: Conversions 2b**

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?

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  $77^{\circ}$ ?

3 If the temperature in Buffalo is  $23^{\circ}$  Fahrenheit, what is the temperature in degrees Celsius? [Use the formula  $C = \frac{5}{9}(F - 32)$ .]

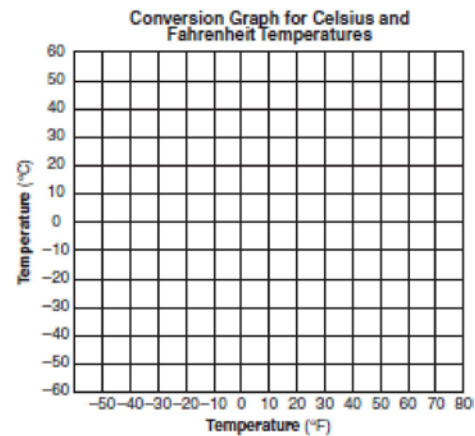
4 The formula for converting temperatures in degrees Celsius to degrees Fahrenheit is  $F = \frac{9}{5}C + 32$ . If the temperature is  $20^{\circ}\text{C}$ , what is the temperature in degrees Fahrenheit?

5 Faith wants to use the formula  $C(f) = \frac{5}{9}(f - 32)$  to convert degrees Fahrenheit,  $f$ , to degrees Celsius,  $C(f)$ . If Faith calculated  $C(68)$ , what would her result be?

6 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  $-8$ .

7 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?

8 Connor wants to compare Celsius and Fahrenheit temperatures by drawing a conversion graph. He knows that  $-40^{\circ}\text{C} = -40^{\circ}\text{F}$  and that  $20^{\circ}\text{C} = 68^{\circ}\text{F}$ . On the accompanying grid, construct the conversion graph and, using the graph, determine the Celsius equivalent of  $25^{\circ}\text{F}$ .



### N.Q.A.1: Conversions 2b Answer Section

1 ANS:

59

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

REF: 010901ia

2 ANS:

25°

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

REF: 089908a

3 ANS:

-5

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

REF: 060407a

4 ANS:

68

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

REF: 080804a

5 ANS:

20° Celsius

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

REF: 011710ai

6 ANS:

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

REF: 060021a

7 ANS:

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

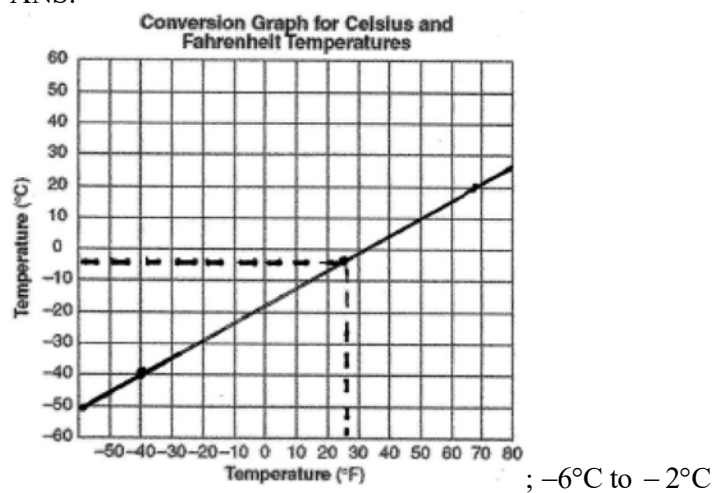
$$50. \quad 10 = \frac{5}{9}(F - 32)$$

$$18 = F - 32$$

$$F = 50$$

REF: 010734a

8 ANS:



REF: 060128a