

### QUESTION 1.

**Choice C is correct.** Marilyn's distance from her campsite remained the same during the time she ate lunch. This is represented by a horizontal segment in the graph. The only horizontal segment in the graph starts at a time of about 1:10 P.M. and ends at about 1:40 P.M. Therefore, Marilyn finished her lunch and continued her hike at about 1:40 P.M.

Choices A, B, and D are incorrect and may be the result of a misinterpretation of the graph. For example, choice B is the time Marilyn started her lunch, and choice D is the time Marilyn was at the maximum distance from her campsite.

### QUESTION 2.

**Choice B is correct.** Of the 25 people who entered the contest, there are 8 females under age 40 and 2 males age 40 or older. Therefore, the probability that the contest winner will be either a female under age 40 or a male age 40 or older is  $\frac{8}{25} + \frac{2}{25} = \frac{10}{25}$ .

Choice A is incorrect and may be the result of dividing 8 by 2, instead of adding 8 to 2, to find the probability. Choice C is incorrect; it is the probability that the contest winner will be either a female under age 40 or a female age 40 or older. Choice D is incorrect and may be the result of multiplying 8 and 2, instead of adding 8 and 2, to find the probability.

### QUESTION 4.

**Choice C is correct.** The graph of  $y = f(n)$  in the coordinate plane is a line that passes through each of the points given in the table. From the table, one can see that an increase of 1 unit in  $n$  results in an increase of 3 units in  $f(n)$ ; for example,  $f(2) - f(1) = 1 - (-2) = 3$ . Therefore, the graph of  $y = f(n)$  in the coordinate plane is a line with slope 3. Only choice C is a line with slope 3. The  $y$ -intercept of the line is the value of  $f(0)$ . Since an increase of 1 unit in  $n$  results in an increase of 3 units in  $f(n)$ , it follows that  $f(1) - f(0) = 3$ . Since  $f(1) = -2$ , it follows that  $f(0) = f(1) - 3 = -5$ . Therefore, the  $y$ -intercept of the graph of  $f(n)$  is  $-5$ , and the slope-intercept equation for  $f(n)$  is  $f(n) = 3n - 5$ .

Choices A, B, and D are incorrect because each equation has the incorrect slope of the line (the  $y$ -intercept in each equation is also incorrect).

**QUESTION 6.**

**Choice A is correct.** The sum of the two polynomials is  $(3x^2 - 5x + 2) + (5x^2 - 2x - 6)$ . This can be rewritten by combining like terms:

$$(3x^2 - 5x + 2) + (5x^2 - 2x - 6) = (3x^2 + 5x^2) + (-5x - 2x) + (2 - 6) = 8x^2 - 7x - 4.$$

Choice B is incorrect and may be the result of a sign error when combining the coefficients of the  $x$ -term. Choice C is incorrect and may be the result of adding the exponents, as well as the coefficients, of like terms. Choice D is incorrect and may be the result of a combination of the errors described in B and C.

**QUESTION 7.**

**Choice D is correct.** To solve the equation for  $w$ , multiply both sides of the equation by the reciprocal of  $\frac{3}{5}$ , which is  $\frac{5}{3}$ . This gives  $\left(\frac{5}{3}\right) \cdot \frac{3}{5}w = \frac{4}{5} \cdot \left(\frac{5}{3}\right)$ , which simplifies to  $w = \frac{20}{9}$ .

Choices A, B, and C are incorrect and may be the result of errors in arithmetic when simplifying the given equation.

**QUESTION 12.**

**Choice D is correct.** A zero of a function corresponds to an  $x$ -intercept of the graph of the function in the  $xy$ -plane. Therefore, the complete graph of the function  $f$ , which has five distinct zeros, must have five  $x$ -intercepts. Only the graph in choice D has five  $x$ -intercepts, and therefore, this is the only one of the given graphs that could be the complete graph of  $f$  in the  $xy$ -plane.

Choices A, B, and C are incorrect. The number of  $x$ -intercepts of each of these graphs is not equal to five; therefore, none of these graphs could be the complete graph of  $f$ , which has five distinct zeros.