

## Percents Answer Key

- C.** We are told *exactly* 35% of the students received an A. Therefore 0.35 multiplied by the total number of students should be a whole number (i.e. no decimal point). We multiply 0.35 with each answer choice. We check:  $(0.35)(30)=10.5$ ; Choice A is incorrect.  $(0.35)(22)=7.7$ ; Choice B is incorrect.  $(0.35)(15)=5.25$ ; Choice D is incorrect. The only choice possible is C:  $(0.35)(20)=7$ ; Choice C is the correct answer. Choices A, B, and D are incorrect because none of them give a whole number when multiplied by 35%.
- B.** To find how many minutes Lainey spends washing dishes, multiply  $0.30 \times 90 = 27$  minutes. Note that 90 minutes = 1.5 hours. Choice A is incorrect because the question is asking for the answer in minutes and this answer choice results from  $0.3 \times 1.5$  hours. Choice C is incorrect and may result from a confusion of the percentage as the minutes spent washing dishes. Choice D is incorrect and is a random value.
- B.** Solve the following equation:  $0.95l * (1 + p)w = 1.16(\text{original area}) = 1.16 * l * w$

$$0.95 * (1 + p) = 1.16$$
$$(1 + p) = 1.22$$
$$p = 0.22$$

Convert to percentage:  $0.22 \times 100 = 22\%$ . The width was increased by 22%. Choices A, C, and D are incorrect because none of them increase the area of the rectangle by 16% given that the length was decreased by 5%.
- A.** Let  $x$  = the original price of the headphones. Then we can write the equation  $p = (1 - 0.15)x + (0.06)(1 - 0.15)x = 0.85x(1 + 0.06) = (0.85)(1.06)x$ . Solving for the original price in terms of  $p$ , you get the expression:  $x = \frac{p}{(0.85)(1.06)}$ . Choices B, C, and D all are incorrect because they give the wrong expression for the original price in terms of  $p$  and may result from incorrect equation set ups or errors in equation manipulation.
- A.** To find the change from 2007 and 2017, first find the difference in wild Asian elephants by  $120000 - 35000 = 85000$ . There was a decrease of 85000 wild Asian elephants. To find what percentage of the original number of elephants was lost, compute  $\frac{85000}{120000} = 0.708$ . To convert this into a percentage, multiply by 100. Therefore, the wild elephant population decreased by 70.8% between the years 2007 and 2017. Choice B is incorrect because the elephant population decreased by 70.8% and not 29.2%. This answer may have resulted from  $\frac{35000}{120000}$ , which is incorrect because it does not calculate the original number of elephants lost, but instead calculates the percent of elephants that are still alive. Choices C and D are incorrect because the elephant population decreased, not increased.
- D.** The number of socks that are damaged is equal to  $0.02 * 10,000 = 200$ . The number of socks that are stolen is equal to  $0.008 * 10,000 = 80$ . The total pairs of stolen or damaged socks is  $200 + 80 = 280$ . Choice A is incorrect because it is the number of socks that are stolen. Choice B is incorrect because it is the difference of the number of damaged socks and the number of stolen socks. Choice C is incorrect because it is the number of socks that are damaged.
- C.** Let  $m$  be the total number of marbles in the bag. We can set up an equation to determine how many total marbles are in the bag.  $0.652m = 75$ .  $m = 115$  total marbles. Choices A and B must be incorrect because they suggest a total number of marbles smaller than the number of blue marbles. Choice D is incorrect and may result from the multiplication of  $75 \times 6.52$ .

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8. **A.** To solve this problem, solve the equation  $14 = 0.40x$  where  $x$  is the total number of students on the school bus. Therefore,  $x = 35$ . To find the number of girls on the bus, subtract the number of boys from the total number of students to get  $35 - 14 = 21$  girls. Choices B and D are incorrect and are random numbers. Choice C is incorrect because it is the total number of the students on the school bus, but the question is asking for the number of girls on the school bus.
9. **B.** Since \$250 is spent on groceries per month, and groceries make up 40% of Chris' total spending, the total amount of dollars Chris spends per month is:  $250 = 0.4x$ . Solving for  $x$  we get  $x = \frac{250}{0.4} = 625$ . Chris spend \$625 per month. Since entertainment makes up 25% of the total spending per month, the total amount of money used for entertainment is 25% of  $625 = 0.25 \times 625 = 156.25$ . Choice A is incorrect and may have resulted from an incorrect direct conversion of the percent of total spending to a dollar amount. Choice C is incorrect and is a random distractor. Choice D is incorrect because it is the total amount of money Chris spend per month, and not the amount of money spent on entertainment.
10. **D.** The number of students during the second week should be less than the number of students on the first day, so the answer should be a number greater than 60. To solve the problem, solve the equation  $0.5x = 30$ , where  $x$  is the number of students in the class on the first day. Divide 0.5 on both sides to get  $x = 60$ . There were 60 students in the class on the first day. Choice A is incorrect because the class decreased and not increased. 15 students would be the correct answer if the class size had increased by 50%. Choices B and C are incorrect and are random number distractors.