

“Calculator Race” Answers and Explanations

1. **(D)** Solve the problem by manipulating the fractions: $2\frac{2}{7} + 1\frac{1}{3} = \frac{16}{7} + \frac{4}{3} = \frac{48+28}{21} = \frac{76}{21} = 3\frac{13}{21}$, (D). Contrast this with the calculator method: $2\frac{2}{7} \approx 2 + 0.29 = 2.29$; $1\frac{1}{3} \approx 1 + 0.33 = 1.33$; and $2.29 + 1.33 = 3.62$. Now, convert the answer choices to find the right one:
- (A) $3\frac{2}{21} \approx 3 + 0.10 = 3.10$
 (B) $3\frac{3}{21} \approx 3 + 0.14 = 3.14$
 (C) $3\frac{3}{10} = 3 + 0.30 = 3.30$
 (D) $3\frac{13}{21} \approx 3 + 0.62 = 3.62$
 (E) $3\frac{15}{21} \approx 3 + 0.71 = 3.71$
- Thus, (D) is the correct choice. Note that having to convert the fractions in the answer choices makes the calculator an inefficient tool for solving this item (unless the calculator includes a “FRAC” key, in which case this would be an easy item).
2. **(D)** This problem is easily solved in your head. The dimensions are 250, 250, 300, and 300, which quickly adds to $500 + 600 = 1,100$. Doing the calculation in your head is faster than pushing the buttons on a calculator.
3. **(D)** This is another problem easily solved in your head: $\frac{\$18}{12} = \frac{\$3}{2} = \$1.50$ per rose. There is no advantage in using a calculator to solve this item.
4. **(E)** This item can be solved using a calculator: $\left(\frac{39}{61}\right)(100) = 63.9\%$, or 64%. But it is simple enough to solve by hand: the fraction is $\frac{39}{61}$, which is very close to $\frac{40}{60} = \frac{2}{3}$, or $66\frac{2}{3}\%$. Therefore, the correct answer must be (E), 64%.
5. **(B)** Again, it is faster to perform the calculations by hand rather than using a calculator: $4 - |-7| = |-4| - |5 - 12| = 4 - 7 = -3$.
6. **(E)** A formula problem like this appears as though made for a calculator solution, but in fact it too can be efficiently attacked without one: $F = \frac{9}{5}(34) + 32$. If the 34 were 35, then it would be possible to simplify the equation: $F = \frac{9}{5}(35) + 32 = (9)(7) + 32 = 63 + 32 = 95$. So, the actual value is just a tad less than 95, making 93 the correct answer.
7. **(C)** Again, a calculator simply isn’t necessary: $\frac{3.1 \text{ miles}}{20 \text{ minutes}} = \frac{3.1 \text{ miles}}{\frac{1}{3} \text{ hour}} = (3.1)(3) = 9.3$ miles per hour.
8. **(E)** Again, it’s faster to do the calculations in your head. The radius of the circle is 5, so the diameter is 10, and the diameter is equal to the side of the square. Thus, the area of the square is $10 \cdot 10 = 100$.
9. **(E)** To solve this problem, it will be necessary to divide: $\frac{12 \text{ ounces}}{0.03 \text{ ounces}} = \text{number of plastic fasteners}$. But you don’t need a calculator: $\frac{1,200}{3} = 400$ plastic fasteners.

10. **(A)** On this item, using a calculator could actually get you into trouble. A calculator will indicate that the square root of 81 is 9 and the square root of 49 is 7, which means that a possible value for $x + y$ is 16—not one of the answer choices. Of course, other possible values are -9 and -7 , which total -16 , or -9 and 7 , which total -2 , or 9 and -7 , which total 2 . Only (A) offers one of these choices: -16 .