37. (A) *Judgment* and *judgmental* drop the *e* in *judge* before adding the suffix.
38. (C) The verb *study* does not agree with the singular noun *Sidney.* The word should be *studies.*
39. (A) Try reading the sentence aloud with each choice replacing the blank. Only choice A makes sense.
40. (D) There are several frequently confused words in this sentence, but only *advise* (choice D) is incorrect. The correct word would be *advice*, meaning "recommendation" or "guidance."
41. (C) To be clear and correct, the phrase *having finished the meal* must lie as close as possible to the name it modifies, *Mr. Innes.*
42. (A) The team is traveling as a unit, making the singular form of the verb correct here.
43. (B) A comma should separate the adjectives *small* and *handmade.*
44. (D) *Nevertheless* is one word.
45. (D) The pronoun that replaces this plural noun should be plural, third-person, and possessive.
46. (B) You would calculate *speedily* (an adverb), not *speedy* (an adjective).
47. (C) Choice A misplaces the modifier, making it seem as though I were resting in a cage. Choice B is passive. Choice D is just confusing. The best choice is C.
48. (D) In questions like this one, try to find the phrase that, if moved around, would improve the sentence. In this case, *Standing with the refrigerator door open* should really begin the sentence. If it did, all phrases would appear properly next to the nouns that they modify.
49. (A) You consult *with* people, not from, by, or in them.
50. (B) Read the choices aloud if you are in doubt. The only one that contains phrases in logical order is choice B.

Basic Math Skills

1. (C) To multiply mixed numbers and fractions, first express mixed numbers as fractions. In this case, 3¼ may be expressed as $^{13}/_{4}$. Next, multiply numerators and denominators. $13 \times 1 = 13$. $4 \times 16 = 64$. The answer is $^{13}/_{64}$.
2. (C) Think: $0.20x = 15$. Solve: $x = 15 \div 0.20$. The answer is 75.
3. (C) Set this up as a proportion: $^{270}/_{3} = {}^{x}/_{4.5}$. You may cross-multiply to solve: $270 \times 4.5 = 3x$. $1{,}215 = 3x$. $x = {}^{1{,}215}/_{3}$, or 405.
4. (B) First, determine how much Josie spent: $\$1.35 \times 3 = \$4.05$. Then subtract that total from \$5.00: $\$5.00 - \$4.05 = \$0.95$.
5. (C) 20% is the same as $^{20}/_{100}$. Reduce that to lowest terms by dividing numerator and denominator by 20: $^{1}/_{5}$.

6. (D) If 1 kilogram equals 2.2 pounds, 8 kilograms equal 2.2×8, or 17.6 pounds.
7. (D) Reading from left to right, M = 1,000, D = 500, X = 10, and VI = 6, making the date 1516.
8. (B) Multiplying two numbers with two digits to the right of the decimal point should result in a product with four digits to the right of the decimal point.
9. (B) Without doing the calculation, you should know that multiplying two numbers with two digits to the right of the decimal point results in a product with four digits to the right of the decimal point.
10. (20) Find the total number of sheep in the flock: $15 + 4 + 1 = 20$. Of those 20, 4 are brown. $\frac{4}{20} = \frac{x}{100}$; $x = 20$.
11. (A) The Roman system does not use place value in that the numeral C, for example, can only mean one thing, 100. In modern number systems, a numeral such as 5 may mean something different depending where it falls in the number; for example, in 500 it does not mean the same thing that it means in 0.05.
12. (36) The least common denominator is the smallest number into which both denominators can divide. Use the larger of the two denominators and a guess-and-check system: Multiplying 12 by 2 equals 24, but the other denominator, 9, does not divide into 24. Multiplying 12 by 3 equals 36, and 9 does divide into 36. Therefore, 36 is the least common denominator.
13. (D) The time represented by 0340 (choice A) is 3:40 A.M. Times from 1200 through 2359 are afternoon, or P.M., times.
14. (C) Think of the ratio this way: 3 is to 5 as 81 is to x. You may solve this by setting up an equation and cross-multiplying. $\frac{3}{5} = \frac{81}{x}$. $5 \times 81 = 3x$. $405 = 3x$. $x = 135$.
15. (C) Begin by expressing the mixed numbers as improper fractions: $4\frac{1}{8} = \frac{33}{8}$, and $1\frac{1}{2} = \frac{3}{2}$. To divide by a fraction, multiply by its reciprocal. Therefore, $\frac{33}{8} \div \frac{3}{2} = \frac{33}{8} \times \frac{2}{3}$, or $\frac{66}{24}$. Now reduce to lowest terms: $\frac{66}{24} \div \frac{6}{6} = \frac{11}{4}$. Finally, express $\frac{11}{4}$ as a mixed number: $2\frac{3}{4}$.
16. (B) Add up everything Mr. Sanders spends and subtract that from the original $100. He spends $8.45 + $2.25 + $20, for a total of $30.70. $100 – $30.70 = $69.30.
17. (345) First figure out how many hours she worked all week. $7 + 6.5 + 6.5 + 6.5 + 6.5 = 33$ hours in all. Now multiply that by $10.45 per hour: $10.45 \times 33 = $344.85. Since you must round to the nearest whole number, the answer is $345.
18. (A) Solve by multiplying the cost of the house by 8%: $152,000 \times 0.08 = $12,160.

19. (250) One centimeter = 10 millimeters, so 25 centimeters = 250 millimeters.

20. (C) You can find the answer by setting up a proportion: $\frac{1}{40} = \frac{4.5}{x}$. Cross-multiplication leads to $x = 4.5(40)$, or $x = 180$ inches. Converting that to feet gets you an answer of $\frac{180}{12}$, or 15 feet.

21. (D) You should not need to compute if you estimate first. Your answer will be greater than 234 by around 23 + 2. The only possible answer is D.

22. (20) Think of this as an equation: $20\% = \frac{20}{100}$. $(\frac{20}{100})x = 4$. If you reduce this in your head to $(\frac{1}{5})x = 4$, you should be able to ascertain the answer without computing. 20% is the same as $\frac{1}{5}$, so you are looking for a number that is 5 times 4.

23. (A) To add mixed numbers, first express them as improper fractions. In this case, $4\frac{2}{3}$ may be expressed as $\frac{14}{3}$, and $6\frac{1}{2}$ may be expressed as $\frac{13}{2}$. Next, find the common denominator, 6. $\frac{14}{3} = \frac{28}{6}$, and $\frac{13}{2} = \frac{39}{6}$. Add the numerators: 28 + 39 = 67. $\frac{67}{6} = 11\frac{1}{6}$.

24. (A) Find the total amount she spent by multiplying number of stamps by cost: 20 × $.29 = $5.80, and 40 × $.42 = $16.80. $16.80 + $5.80 = $22.60. $25.00 − $22.60 = $2.40.

25. (A) 7:05 P.M. Choice B would be 1905 in military time.

26. (C) You can find the average by dividing her total by the number of months she has been collecting. 144 ÷ 8 = 18.

27. (A) You can convert 70% to a decimal (0.7) if that makes this easier to solve. 110 × 0.7 = 77

28. (D) The calculation would look like this:

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  165 r2
31)5117
  31
  201
  186
   157
   155
     2
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29. (D) The ratio is 3:5 beans to beef. Gus is using x beans:8 beef. Make an equation and cross-multiply to find the answer: $\frac{3}{5} = \frac{x}{8}$. $3 \times 8 = 5 \times x$. $x = 24 \div 5 = 4.8$

30. (D) Think: $1.75x = 98$. $98 \div 1.75 = x$, so $x = 56$.

31. (C) Decimals must have denominators of 10, 100, and so on. You can make $\frac{7}{4}$ into a fraction with a numerator of 100 by multiplying both numerator and denominator by 25: $\frac{7}{4} \times \frac{25}{25} = \frac{175}{100}$. $\frac{175}{100} = 1.75$.

32. (D) Because 1 meter = around 3.28 feet, 6 meters = 3.28 × 6 feet, or 19.68 feet.

33. (A) A percentage is equivalent to a fraction with a denominator of 100. Think $\frac{25}{80} = \frac{x}{100}$. Cross-multiply to get the answer: $2{,}500 = 80x$, so $x = 31.25$.

34. (D) If 10 pencils are divided between 2 students, each student gets 5 pencils. For 20 students, you need 20×5, or 100 pencils.

35. (1,204) M = 1,000, CC = 200, and IV = 4.

36. (B) You can think of this algebraically: The certain number, $x = (18 \times 4) - 7$. Therefore, $x = 65$.

37. (B) Ordinarily, multiplying two numbers with two digits right of the decimal point would result in a product with four digits to the right of the decimal point. Here, however, the last digit, zero, is dropped off.

38. (B) Since each number has one digit after the decimal point, the product should have two digits following the decimal point.

39. (C) The formula is $(F - 32) \times \frac{5}{9} = C$. So $(82 - 32) \times \frac{5}{9} = 27.777$, or around 28.

40. (B) The units don't matter here; the scale is 2:1. If 2 cm = 1 m, 8 cm = 4 m, and 10 cm = 5 m.

41. (C) Look for a pattern. He can bake 3 dozen in 30 minutes, so he can bake twice that in twice the time, three times that in three times the time, and four times that (12 dozen) in four times the time—120 minutes, or 2 hours.

42. (B) Estimating may not get you close enough to the answer.

43. (C) First find the least common denominator. Then subtract the numerators. $\frac{25}{45} - \frac{18}{45} = \frac{7}{45}$.

44. (C) Think of this as a proportion: 3 bars/\$2.58 = 5 bars/x. Cross-multiply to solve: $5(\$2.58) = 3x$, so $\$12.90 = 3x$, so $\$4.30 = x$. You may also solve this by figuring out the unit cost: \$2.58/3 = \$.86 per bar, so 5 bars would cost $\$.86 \times 5 = \$4.30$.

45. (D) To subtract mixed numbers, first express them as improper fractions. In this case, $4\frac{1}{5}$ may be expressed as $\frac{21}{5}$, and $2\frac{2}{3}$ may be expressed as $\frac{8}{3}$. Next, find the common denominator—15. $\frac{21}{5} = \frac{63}{15}$, and $\frac{8}{3} = \frac{40}{15}$. Subtract the numerators: $63 - 40 = 23$. $\frac{23}{15} = 1\frac{8}{15}$.

46. (C) Decimals are expressed as tenths, hundredths, and so on. Think: $\frac{2}{5} = \frac{x}{10}$. The answer is 4, so the decimal is 0.4.

47. (72) 25% is the same as ¼, which may be an easier way to think about this. $18 \times 4 = 72$.

48. (D) If she gets 2% quarterly, she gets 2% calculated four times a year. The first quarter, she ends up with \$102. The second quarter, she makes 2% on \$102, for a total of \$104.04. The third quarter, she makes 2% on \$104.04, for a total of \$106.12. The fourth quarter, she makes 2% on \$106.12, for a total of \$108.24.

49. (11,200) First find the number of calories daily: $2,000 - (0.2 \times 2,000) = 1,600$. Now multiply that by the number of days in a week: $1,600 \times 7 = 11,200$.
50. (A) There are 3 teaspoons in a tablespoon, so there are 9 teaspoons in 3 tablespoons.

Biology

1. (D) These beadlike organelles are located in the cytoplasm of nearly all cells, on the rough endoplasmic reticulum. They assemble the proteins that the cell uses to grow, repair itself, and control processes.
2. (C) The products of fermentation are ethanol and carbon dioxide. It is the latter that causes the dough to rise.
3. (B) Mitosis creates cells that are exact copies of each other, down to the number of chromosomes in the cell. Meiosis, which creates sex cells, forms cells with half the number of chromosomes in the original cell.
4. (D) DNA can mutate and change. The other choices are true statements.
5. (C) The gene for the disease is recessive, so only homozygous recessive offspring (*aa*) manifest the disease. An offspring that carries the recessive gene along with the dominant *A* gene (*Aa*) will carry but not manifest the disease. In a Punnett square, this would mean two out of four offspring.
6. (A) This describes a hypotonic situation—there are fewer dissolved particles outside the cell than inside. This may enable water to flow into the cell from the solution, swelling the cell, which may burst.
7. (C) Xylem conducts water (choice A); phloem is the system of narrow tubes that transports sugars and other nutrients.
8. (B) The shape of an enzyme controls its fit with its substrate. Changes in temperature and/or pH can alter an enzyme's shape.
9. (A) The stamen (choice A) is the male reproductive organ in a flowering plant. The pistil (choice B) is the female reproductive organ. The stigma (choice C) is the top part of the pistil, and the style (choice D) is a slender stalk below the stigma.
10. (B) A parasitic relationship is one in which one organism benefits (in this case, the bacterium) to the detriment of another (in this case, the human).
11. (D) The Latin names by which we know certain animals are typically their genus and species names. In order, a house cat is from the kingdom Animalia, phylum Chordata, class Mammalia, order Carnivora, family Felidae, genus *Felis*, and species *catus*.
12. (A) Waxes, oils, and fats are lipids.