Fractions and Decimals

For questions in the Quantitative Comparison format ("Quantity A" and "Quantity B" given), the answer choices are always as follows:

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(B) Quantity B is greater.
(C) The two quantities are equal.
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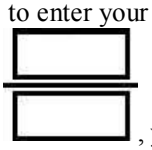
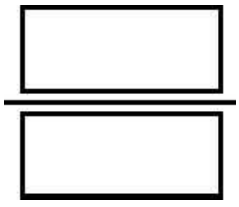
For questions followed by a numeric entry box  , you are to enter your own answer in the box. For questions followed by fraction-style numeric entry boxes  , you are to enter your answer in the form of a fraction. You are not required to reduce fractions. For example, if the answer is 1/4, you may enter 25/100 or any equivalent fraction.

All numbers used are real numbers. All figures are assumed to lie in a plane unless otherwise indicated. Geometric figures are not necessarily drawn to scale. You should assume, however, that lines that appear to be straight are actually straight, points on a line are in the order shown, and all geometric objects are in the relative positions shown. Coordinate systems, such as *xy*-planes and number lines, as well as graphical data presentations such as bar charts, circle graphs, and line graphs, *are* drawn to scale. A symbol that appears more than once in a question has the same meaning throughout the question.

1. $\frac{1}{2}+\frac{2}{3}+\frac{3}{4}+\frac{4}{5}+\frac{5}{6}=$



2.

Quantity A	**Quantity B**
$-\frac{3}{4}+\frac{2}{3}$	$-\frac{3}{4}\times\frac{2}{3}$

3. The temperature in Limerick is 3/4 that in Cairo, where the temperature is 8/5 that in Halifax. If the temperature in

Limerick is 60°, what is the temperature in Halifax?

(A) 50°
(B) 55°
(C) 64°
(D) 72°
(E) 75°

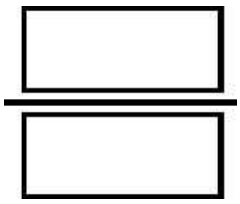
4. At a convention of monsters, 2/5 have no horns, 1/7 have one horn, 1/3 have two horns, and the remaining 26 have three or more horns. How many monsters are attending the convention?

(A) 100
(B) 130
(C) 180
(D) 210
(E) 260

5. One dose of secret formula is made from 1/6 ounce of Substance X and 2/3 ounce of Substance Z. How many doses are in a 30-ounce vial of secret formula?

(A) 20
(B) 24
(C) 30
(D) 36
(E) 45

6. Devora spends 1/4 of her money on a textbook, and then buys a notebook that costs 1/6 the price of the textbook. Assuming she makes no other purchases, what fraction of her money does Devora have left over?



7. 0.003482 =

Indicate <u>all</u> such statements.

☐ -0.003482×10^{-1}
☐ 0.3482×10^{-2}
☐ 34.82×10^{4}
☐ 34.82×10^{-4}
☐ $3{,}482 \times 10^{-6}$

8. 12.12×10^{-3} =

Indicate <u>all</u> such statements.

☐ -1.21×10^{3}

☐ 0.012
☐ 0.00001212×10^3
☐ 0.01212×10^3

9. 5 is how many fifths of 10?

(A) 2.5
(B) 5
(C) 10
(D) 20
(E) 50

10.

$x > 0$ and $y > 0$

Quantity A	**Quantity B**
$\frac{1}{x}+\frac{1}{y}$	$\frac{xy}{x+y}$

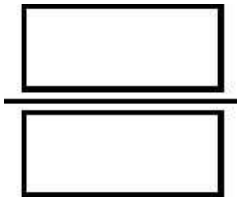
11.

Quantity A	**Quantity B**
$\frac{75}{4^2}\times\frac{3^2}{45}\times\frac{2^4}{45}$	$\frac{3^2}{4^2}\times\frac{2^2}{5^2}\times\frac{10}{3}$

12. 5/12 of all the students are girls and 1/4 of all the students are girls who take Spanish. What fraction of the girls take Spanish?

(A) 5/48
(B) 5/12
(C) 2/5
(D) 3/5
(E) 7/12

13. 1/5 of all the cars on a certain auto lot are red, and 2/3 of all the red cars are convertibles. What fraction of all the cars are NOT red convertibles?



14. Two identical pies are cut into a total of 16 equal parts. If each part is then split equally among three people, what fraction of a pie does each person receive?

(A) 1/48

(B) 1/24
(C) 1/16
(D) 3/16
(E) 3/8

15. Which of the following are bigger than twice 21/49?

Indicate <u>all</u> such values.

☐ 0.84
☐ 0.857
☐ 0.858
☐ 0.86

16.

$xy \neq 0$

Quantity A	**Quantity B**
$2+\frac{1}{xy}$	$\frac{2xy+1}{xy}$

17.

Quantity A	**Quantity B**
$\frac{\frac{1}{4}}{\frac{2}{3}-\frac{1-2}{\frac{1}{3}}}$	$\frac{\frac{1}{3}}{\frac{1}{4}-\frac{3-4}{\frac{2}{3}}}$

18.

At Store A, 3/4 of the apples are red.
At Store B, which has twice as many apples, 0.375 of them are red.

Quantity A	**Quantity B**
The number of red apples at Store A	The number of red apples at Store B

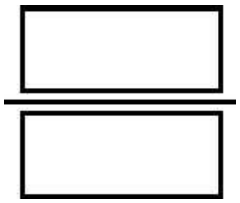
19.

Dweezil has one third the number of black marbles that Gina has, but he has twice as many white marbles.
Both people have only black marbles and white marbles.

Quantity A	**Quantity B**

The number of marbles Dweezil has The number of marbles Gina has

20. A pot of soup is divided equally into two bowls. If Manuel eats 1/4 of one of the bowls of soup and 2/5 of the other bowl of soup, how much of the soup did Manuel eat?



21. What is half of $\frac{x^2}{8}$?

(A) $\frac{x}{4}$
(B) $\frac{x^2}{4}$
(C) $\frac{x}{8}$
(D) $\frac{x^2}{16}$
(E) It cannot be determined.

22. $\frac{\frac{ab}{c}}{\frac{cd}{a}} =$

(A) ac
(B) bd
(C) $\frac{1}{bd}$
(D) $\frac{a^2b}{c^2d}$
(E) $\frac{ab^2}{cd^2}$

23. $\left(\frac{\sqrt{12}}{5}\right)\left(\frac{\sqrt{60}}{2^4}\right)\left(\frac{\sqrt{45}}{3^2}\right) =$

(A) $\frac{1}{12}$

(B) $\frac{1}{6}$

(C) $\frac{1}{4}$

(D) $\frac{1}{3}$

(E) $\frac{1}{2}$

24. $\frac{-1}{2x}-\frac{1}{4y}+\frac{1}{xy}+\frac{1}{8}=$

(A) $\frac{(x-4)(2-y)}{8xy}$

(B) $\frac{(x-2)(y-4)}{8xy}$

(C) $\frac{(x-4)(y-2)}{8xy}$

(D) $\frac{(x+2)(4-y)}{8xy}$

(E) $\frac{(x-2)(4-y)}{8xy}$

25.

x is a digit in the decimal 12.15x9, which, if rounded to the nearest hundredth, would equal 12.16.

Quantity A	**Quantity B**
x	4

26. $\frac{\frac{a}{b}}{\frac{c}{d}+\frac{e}{f}}=$

(A) $\frac{acd}{bcf+def}$

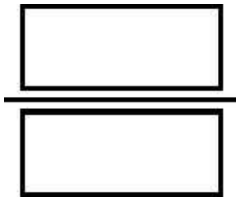
(B) $\frac{ace}{bdf+bcd}$

(C) $\frac{acf}{bde+cdf}$

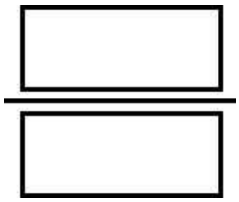
(D) $\frac{ade}{bef+cdf}$

(E) $\frac{adf}{bcf+bde}$

27. $\frac{(17^2)(22)(38)(41)(91)}{(19)(34)(123)(11)(119)(26)} =$



28. In a decimal number, a bar over one or more consecutive digits means that the pattern of digits under the bar repeats without end. As a fraction, $7.58\overline{3} =$



29.

Quantity A	**Quantity B**
$\left(\frac{\sqrt{25}}{\sqrt{10}}\right)\left(\frac{\sqrt{8}}{\sqrt{15}}\right)$	$\left(\frac{\sqrt{51}}{\sqrt{46}}\right)\left(\frac{\sqrt{23}}{\sqrt{34}}\right)$

$$\sqrt{\frac{3}{2}}-\sqrt{\frac{2}{3}}=$$

(A) $\dfrac{\sqrt{3}-\sqrt{2}}{\sqrt{6}}$

(B) $\dfrac{1}{\sqrt{6}}$

(C) $\dfrac{\sqrt{3}}{3}$

(D) $\dfrac{\sqrt{3}}{2}$

(E) $\dfrac{\sqrt{5}}{\sqrt{6}}$

31. If $abc \neq 0$, then $\dfrac{ab}{cb}+\dfrac{a}{c}-\dfrac{a^2b^3}{abc}=$

(A) $\dfrac{a-b^2}{c}$

(B) $\dfrac{a^2-2b^2}{c}$

(C) $\dfrac{2a^2-b^2}{c}$

(D) $\dfrac{a\left(2-b^2\right)}{c}$

(E) $\dfrac{a^2b\left(2-b^2\right)}{c}$

32. If 3/4 of all the cookies have nuts and 1/3 of all the cookies have both nuts and fruit, what fraction of all the cookies have nuts but no fruit?

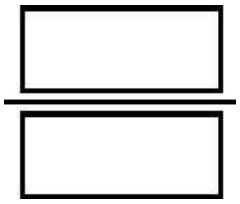
(A) 1/4
(B) 5/12
(C) 1/2
(D) 7/12
(E) 5/6

33. 1/4 of all the juniors and 2/3 of all the seniors are going on a trip. If there are 2/3 as many juniors as seniors, what

fraction of the students are not going on the trip?

(A) 4/9
(B) 1/2
(C) 2/3
(D) 1/3
(E) 5/6

34. 4/5 of the women and 3/4 of the men speak Spanish. If there are 40% as many men as women, what fraction of the group speaks Spanish?



35.

$abcd \neq 0$

Quantity A	**Quantity B**
$\frac{a^2b}{cd^2} \times \frac{d^3}{abc}$	$\frac{d^2}{bc} \times \frac{ab^2}{bd}$

36.

Quantity A	**Quantity B**
$\frac{24}{3\sqrt{2}} - \frac{4}{\sqrt{2}}$	$\sqrt{6}$

37.

$m \neq 0$

Quantity A	**Quantity B**
$\left(\frac{1}{2} + \frac{1}{m}\right)(m+2)$	$\frac{(m+2)^2}{2m}$

38.

The reciprocal of x's non-integer decimal part equals $x + 1$, and $x > 0$.

Quantity A	**Quantity B**
x	$\sqrt{2}$

39. Which two of the following numbers have a sum between 1 and 2?

Indicate <u>both</u> of the numbers.

- ☐ $\frac{7(2^3)}{3^3-7}$
- ☐ $\frac{2^4}{1+2+3+4}$
- ☐ $\frac{3}{11} \div \frac{6}{11}$
- ☐ $\frac{-2^3 3^2}{2^2 5^2}$
- ☐ $\frac{-11^2 - 11^3}{(30)(44)}$

40. Which three of the following answers, when multiplied by each other, yield a product less than -1?

Indicate <u>all three</u> numbers.

- ☐ $\frac{-15}{17}$
- ☐ $\frac{-18}{19}$
- ☐ $\frac{23}{-22}$
- ☐ $\frac{17}{-16}$

41. The decimal representation of the reciprocal of integer *n* contains an infinitely repeating pattern of digits, expressed with a bar over the repeating digits. The minimum length of the bar (in digits) is *n* - 1.

Indicate <u>all</u> of the integers below that could be *n*.

- ☐ 3
- ☐ 5
- ☐ 7
- ☐ 9
- ☐ 11

42. $(3-\frac{1}{3})^2+(3+\frac{1}{3})^2=$

(A) 122/9
(B) 164/9
(C) 36
(D) 164/3
(E) 162

43. If $\frac{3}{\frac{m+1}{m}+1}=1$, then m must equal

(A) -2
(B) -1
(C) 0
(D) 1
(E) 2

44.

$$rs=\sqrt{3}$$

Quantity A	**Quantity B**
$\frac{2r\sqrt{12}}{r^2s\sqrt{72}}$	$\frac{14rs^2}{42s}$

45.

Quantity A	**Quantity B**
$\frac{\sqrt{10}}{\sqrt{8}}\div\frac{\sqrt{9}}{\sqrt{10}}$	$\frac{\sqrt{11}}{\sqrt{9}}\div\frac{\sqrt{10}}{\sqrt{11}}$

46.

$$\frac{x}{m}>0$$

Quantity A	**Quantity B**
$\frac{11m+17x}{11m}$	$\frac{17m+11x}{17m}$

47. Which of the following fractions has the greatest value?

(A) $\frac{7}{(16^2)(25)}$

(B) $\frac{5}{(32)(5^4)}$

(C) $\frac{30}{(512)(5^3)}$

(D) $\frac{5}{(4^6)(5)}$

(E) $\frac{4}{(2^{11})(5^2)}$

48.

$$\frac{m}{p} > \frac{n}{p}$$

Quantity A	**Quantity B**
m	n

49. If $2x \neq y$ and $5x \neq 4y$, then

$$\frac{\frac{5x-4y}{2x-y}}{\frac{3y}{y-2x}+5} =$$

(A) $\frac{1}{2}$

(B) $\frac{3}{2}$

(C) $\frac{5}{2}$

(D) $\frac{7}{2}$

(E) $\frac{9}{2}$

50. $\frac{39^2}{2^4} \div \frac{13^3}{4^2} =$

(A) $\frac{13}{2}$

(B) $\frac{9}{2}$

(C) $\frac{3}{2}$

(D) $\frac{3}{13}$

(E) $\frac{9}{13}$

51. To the nearest integer, the non-negative fourth root of integer n rounds to 3. Inclusive, n is between

(A) 0 and 1
(B) 2 and 3
(C) 4 and 9
(D) 10 and 39
(E) 40 and 150

Percents

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1.

Quantity A	**Quantity B**
50 as a percent of 30	The percent increase from 30 to 80

2. If Ken's salary were 20% higher, it would be 20% less than Lorena's. If Lorena's salary is $60,000, what is Ken's salary?

(A) $36,000
(B) $40,000
(C) $42,500
(D) $42,850
(E) $45,000

3. On a certain morning, Stock X is worth $\$x$, where x is positive.

Quantity A	**Quantity B**
The price of Stock X if it decreases in value	The price of Stock X if it decreases in value

by 12%, then increases by 18%.	by 13%, then increases by 19%.

4. Greta's salary is x thousand dollars per year, and she receives a y% raise. Annika's salary is y thousand dollars per year, and she receives an x% raise. x and y are positive integers.

Quantity A	**Quantity B**
The dollar amount of Greta's raise	The dollar amount of Annika's raise

5. Roselba's income exceeds twice Jane's income and both pay the same percentage of income in transportation fees.

Quantity A	**Quantity B**
The amount Jane pays in transportation fees	Half the amount Roselba pays in transportation fees

6. 250% of x is increased by 250% to become 350. What is the value of x?

7. An item's price is discounted by 16%. Subsequently, the discounted price is increased by 16%.

Quantity A	**Quantity B**
The original price	The price after the discount and increase

8. 12 is 5 percent of what number?

9. 7 percent of 9 is what percent of 7?

%

10. What percent of 13 is 20 percent of 195?

%

11. If 14 is added to 56, by what percent does the original number increase?

% increase

12. 25 percent of 30 is 75 percent of what number?

13. What is the percent increase from 50 to 60?


%

14. If x is reduced by 30%, the resulting number is 63. The value of x =

15. 75 reduced by x% is 54. The value of x =


%

16. What is 230% of 15% of 400?

17. 45% of 80 is x% more than 24. The value of x =


%

18. 10 percent of 30 percent of what number is 200 percent of 6?

19. If $y \neq 0$, what percent of y percent of 50 is 40 percent of y?


%

20. If $a \neq 0$, 200 percent of 4 percent of a is what percent of $a/2$?

[ ] %

21. If positive integer m is increased by 20%, decreased by 25%, and then increased by 60%, the resulting number is what percent of m?

[ ] %

22.

Quantity A	**Quantity B**
The price of an item after five consecutive 10% discounts are applied	50% of the price of the item

23. Raymond borrowed $450 at 0% interest. If he pays back 0.5% of the total amount every 7 days, beginning exactly 7 days after the loan was disbursed, and has thus far paid back $18, with the most recent payment made today, how many days ago did he borrow the money?

(A) 6
(B) 8
(C) 25
(D) 42
(E) 56

24. An investment loses half its value in the morning, and then increases in value by 50% that afternoon; no other changes occur to the value of the investment. (Assume the investment's original value was a positive number.)

Quantity A	**Quantity B**
The value of the investment before the day's changes	The value of the investment after the day's changes

25. A house valued at $200,000 two years ago lost 40% of its value in the first year and a further 20% of that reduced value during the second year.

Quantity A	**Quantity B**
The current value of the house	$100,000

26. After one year at her job, Sharon received a 50% increase on her $1,000 weekly salary. Bob, who originally made $1,800 a week, took a 20% percent decrease in salary.

Quantity A	**Quantity B**
Sharon's new salary	Bob's new salary

27. 1% of 200% of 360 is what percent of 0.1% of 60?

 %

28. If a number is increased by 20%, decreased by 15%, and increased by 7%, the overall percent change is closest to a:

(A) 2% decrease
(B) 2% increase
(C) 9% increase
(D) 12% increase
(E) 14% increase

29. If Mary has half as many cents as Nora has dollars, then Nora has what percent more cents than Mary does? (100 cents = 1 dollar)

(A) 100%
(B) 200%
(C) 1,990%
(D) 19,900%
(E) 20,000%

30. The number that is 50% greater than 60 is what percent less than the number that is 20% less than 150?

(A) 5%
(B) 10%
(C) 15%
(D) 20%
(E) 25%

31. A cockroach population doubles every three days. If there were *c* cockroaches on June 1st, what was the percent increase in the population on July 1st? (June has 30 days.)

(A) 900%
(B) 1,000%
(C) 9,999%
(D) 102,300%
(E) 102,400%

32. A computer that was discounted by 15% sold for $612. What was the price of the computer before the discount?

(A) $108.00
(B) $520.20
(C) $703.80
(D) $720.00
(E) $744.00

33.

In April, the price of fuel increased by 40%.
In May, the price rose by another 30%.

Quantity A	**Quantity B**

The price increase in April	The price increase in May

34. If 35% of the acreage of a national forest was destroyed in a wildfire, and the remainder regenerates at a rate of 10% a year, after how many years, assuming no further losses, will the forest exceed its original acreage?

(A) 10
(B) 8
(C) 5
(D) 4
(E) 3

35. Aloysius spends 50% of his income on rent, utilities, and insurance, and 20% on food. If he spends 30% of the remainder on video games and has no other expenditures, what percent of his income is left after all of the expenditures?

(A) 30%
(B) 21%
(C) 20%
(D) 9%
(E) 0%

36.

An item costs x dollars where x is a positive integer.

Quantity A	**Quantity B**
The price of the item after a 10% discount and then a 7% tax are applied	The price of the item after a 7% tax and then a 10% discount are applied

37.

An item costs x dollars where x is a positive integer.

Quantity A	**Quantity B**
The price of the item after a 10% discount and then a $10-off coupon are applied	The price of the item after a $10-off coupon and then a 10% discount are applied

38. Adalstein bought a bag of 15 magic beans for $60. One-third of the beans cost $2 each and the rest cost $5 each. If there was a hole in the bag and all of the more expensive beans fell out, the lost beans represented approximately what percentage of the money Adalstein paid for all of them?

(A) 7%
(B) 13%
(C) 67%
(D) 83%
(E) 88%

39. Coffee formerly accounted for 5% of a family's food budget, while fresh fruits and vegetables accounted for 20%, and meat and dairy accounted for 30%. The family spent the rest of the food budget on fast food and desserts. If the price of coffee doubled and the family reduced the fruit and vegetable share to meet that expense and spend the same overall, the ratio of their new fresh fruit and vegetable expenditures to their fast food and

dessert expenditures equals which of the following?

(A) 3/20
(B) 1/5
(C) 1/3
(D) 3/8
(E) 3/5

40. J. R. weighed 200 pounds before starting a diet on January 1st. He lost 15% of his original weight. Then he went off the diet and gained 35 pounds by December 31st of the same year. From the beginning to the end of the year, J.R.'s weight changed by what percent?

(A) +5%
(B) +2.5%
(C) 0%
(D) -2.5%
(E) -5%

41. In 1970, Company X had 2000 employees, 15% of whom were women. 10% of these women were executives. In 2012, the company had 12,000 employees, 45% of whom were women. If 40% of those women were executives, what is the percent increase in the number of women executives from 1970 to 2012?


%

42. 75% of all the boys and 48% of all the girls of Smith High School take civics. If there are 80% as many boys as girls, what percent of all the students take civics?


%

43. Airline A and Airline B both charge $400 for a certain flight. Airline A then reduces its price by 25%. Airline B reduces its price by 55% but adds $150 in fees. Then, Airline A raises its reduced price by 10%.

Quantity A	**Quantity B**
The final price of the flight at Airline A	The final price of the flight at Airline B

44. Jake used to spend $10 for lunch at a restaurant in Chinatown. The tea served with lunch was free, and Jake left a $2 tip. However, the restaurant raised its lunch price by 20% and began to charge $1 for tea. Jake continued to order the same lunch and tea, and increased his tip so that he was still tipping the same percentage of his total bill.

Quantity A	**Quantity B**
Jake's new lunch expenditure	$15.40

45. Half of a shipment of toy trucks was left at Store W, 25% at Store X, 20% at Store Y, and the remaining 20 at Store Z.

Quantity A	**Quantity B**

The positive difference difference between the trucks left at Stores X and Y	20

46.

p is 75% of q and $p = 2r$.

Quantity A	**Quantity B**
$0.375q$	r

47. In a class of 40 students, exactly 90% had a lower GPA than Tom. For the new term, 60 new students join Tom's class. If Tom's GPA was higher than those of 80% of the new arrivals, what percent of the combined class now has a higher GPA than Tom?

(A) 86%
(B) 85%
(C) 16%
(D) 15%
(E) 14%

48.

$0 < x < 100$

Quantity A	**Quantity B**
x% of 0.5% of 40,000	0.05% of 2,000% of $40x$

Profit Per Student (in Dollars) at Dan's Dojo, 2000-2004

2000	60
2001	80
2002	80
2003	100
2004	162

49. If the percent increase from 2004 to 2005 (not shown) is the same as the percent increase from 2000 to 2001, what is the profit per student for 2005?

50. If x is 0.5% of y, then y is what percent of x?

(A) 199%
(B) 200%
(C) 2,000%
(D) 19,900%

(E) 20,000%

51. Bill pays 20% tax on his gross salary of $5,000 each month and spends 25% of the remaining amount on rent.

Quantity A	**Quantity B**
Bill's tax	Bill's rent

52. Four people shared a dinner with an $80 bill and tipped the waiter 15 percent of this amount. If each person contributed equally to paying the bill and tip, how much did each person pay?

(A) $20.00
(B) $23.00
(C) $23.75
(D) $24.00
(E) $25.00

53. The price of a certain stock rose by 25 percent and then decreased by y percent. After the decrease, the stock was back to its original price.

Quantity A	**Quantity B**
y%	25%

54. A chemist is mixing a solution of acetone and water. She currently has 30 ounces mixed, 10 of which are acetone. How many ounces of acetone should she add to her current mixture to attain a 50/50 mixture of acetone and water if no additional water is added?

(A) 2.5
(B) 5
(C) 10
(D) 15
(E) 20

55. By the end of July, a certain baseball team had played 80% of the total games to be played that season and had won 50% of those games. Of the remaining games for the season, the team won 60%.

Quantity A	**Quantity B**
Percentage of total games won for the season	52%

56.

Quantity A	**Quantity B**
0.002	0.4 percent of 4 percent of 1.25

57. Jane has a 40-ounce mixture of apple juice and seltzer that is 30% apple juice. If she pours 10 more ounces of apple juice into the mixture, what percent of the mixture will be seltzer?

(A) 33%
(B) 44%
(C) 50%
(D) 56%

(E) 67%

58. Half of the shirts in a closet are white and 30% of the remaining shirts are gray.

Quantity A	**Quantity B**
The percent of the shirts in the closet that are not white or gray.	20%

59. If 80 percent of the children in a certain room are more than ten years old and 20 percent of these children play an organized sport, what percent of children in the room are over ten but do not play an organized sport?

(A) 16
(B) 20
(C) 40
(D) 60
(E) 64

60. The length and width of a rectangular box are increased by 10% each.

Quantity A	**Quantity B**
10%	The percent increase in the volume of the box

61. The radius of a circle is doubled.

Quantity A	**Quantity B**
The percentage that the area of the circle has been increased	400%

62. If 35% of x equals 140, what is 20% of x?

(A) 9.8
(B) 39.2
(C) 80
(D) 320
(E) 400

63. A population of a colony of bacteria increases by 20 percent every 3 minutes. If at 9:00am the colony had a population of 144,000, what was the population of the colony at 8:54am?

(A) 100,000
(B) 112,000
(C) 120,000
(D) 121,000
(E) 136,000

64. Jane scored 15% higher on her second test than she did on her first test. Jane's score on her third test was a 25% decrease from the score on her second test. If Jane got a 69 on her third test, what was the score on her first test?

(A) 69
(B) 70
(C) 75
(D) 80

(E) 92

65. The price of an item is greater than \$90 and less than \$150

Quantity A	**Quantity B**
The price of the item after a 10% discount and then a \$20 off discount	The price of the item after a \$10 off discount and then a 20% off discount

66. Two classes participate in a contest stacking blocks. Each person in class 1 stacks 80 percent as many blocks as each person in class 2 and there are 25 percent more people in class 1 than class 2.

Quantity A	**Quantity B**
The percent of the total blocks that class 1 stacks	The percent of the total blocks that class 2 stacks

67. x is y percent of z.

Quantity A	**Quantity B**
The percent that z is of x.	$\frac{y}{10,000}$

68. The number that is 20 percent less than 300 is what percent greater than 180?

(A) 25
(B) $33\frac{1}{3}$
(C) 50
(D) $66\frac{2}{3}$
(E) 75

69. A tank that was 40% full of oil is emptied into a 20-gallon bucket. If the oil fills 35% of the bucket's volume, then what is the total capacity of the tank, in gallons?

(A) 8.75
(B) 15
(C) 16
(D) 17.5
(E) 19

70. A full glass of juice is a mixture of 20% grape juice and 80% apple juice. The contents of the glass are poured into a pitcher that is 200 percent larger than the glass. The remainder of the pitcher is filled with 16 ounces of water. What was the original volume of grape juice in the mixture?

(A) 1.6 ounces
(B) 3.2 ounces
(C) 4.8 ounces
(D) 6.4 ounces
(E) 8 ounces

71. If 150 is increased by 60% and then decreased by y percent the result is 192. What is y?

(A) 20
(B) 28
(C) 32
(D) 72
(E) 80

72. A number x is 150% greater than 200. What percent greater is x than 50% of 500?

(A) 0
(B) 20
(C) 50
(D) 100
(E) 200

73. Mixture A weighs 18 grams and is 50% aluminum. Mixture B weighs 32 grams and is 37.5% aluminum. The two mixtures are combined.

Quantity A	**Quantity B**
The percent of the resultant combination that is not aluminum	58%

74. A stockbroker has made a profit on 80% of his 40 trades this year.

Quantity A	**Quantity B**
23	The maximum number of consecutive trades that the stockbroker can lose before his profitable trades drop below 50% for the year

75. In 2011, each member of a committee voted for one of two possible candidates for president. Candidate A received 40% of the vote and Candidate B received the remainder. In 2012, the same two candidates ran for president. Candidate A received 3 more votes than the previous year, a 5% increase in his total number of votes. How many votes did Candidate B receive in 2011?

(A) 40
(B) 60
(C) 75
(D) 90
(E) 150

76. A 16 ounce jar of birdseed is 10% sesame. How much sesame must be added to make the jar 20% sesame?

(A) 1 ounce
(B) 1.6 ounce
(C) 2 ounce
(D) 2.4 ounce
(E) 4 ounce

77. a, b, and c are positive.

Quantity A	**Quantity B**
$(a + b)\%$ of c	$c\%$ of $(a + b)$

78. A certain boat sales lot sells both sailboats and boats that are not sailboats. 25% of the boats are used sailboats. Of

non-sailboats, 3/5 are new. If 33% of all boats are used, approximately what percentage of the sailboats are new?

(A) 31%
(B) 33%
(C) 67%
(D) 68%
(E) 69%

Conference Ticket Advance Discounts	
5-29 days in advance	15%
30-59 days in advance	30%
60-89 days in advance	40%

79. Helen bought a ticket for $252. If she'd bought it 1 day later, she would have paid $306. How many days in advance did she buy her ticket?

(A) 5
(B) 30
(C) 59
(D) 60
(E) 89

Answer Key					
Fractions and Decimals					
1	71/20			42	B
2	A			43	D
3	A			44	B
4	D			45	A
5	D			46	A
6	17/24			47	A
7	II, IV and V only			48	D
8	III only			49	A
9	A			50	E
10	D			51	E
11	A				
12	D			**Percent**	
13	13/15			1	C
14	**B**			2	B
15	III and IV only			3	A
16	C			4	C
17	B			5	B
18	C			6	40
19	D			7	A
20	13/40			8	240
21	D			9	9
22	D			10	300
23	C			11	25%
24	C			12	10
25	A			13	20% Increase
26	E			14	90
27	1/3'			15	28
28	91/12			16	138
29	A			17	50
30	B			18	400
31	D			19	80
32	B			20	16
33	B			21	144
34	11/14'			22	A
35	D			23	E
36	A			24	A
37	D			25	B
38	C			26	A
39	I and V only			27	12000%
40	II, III and IV only			28	C
41	III only			29	D
				30	E
				31	D
				32	D

33	B				
34	C				
35	B				
36	C				
37	B				
38	D				
39	C				
40	B				
41	7100%				
42	60%				
43	C				
44	A				
45	C				
46	C				
47	D				
48	A				
49	216				
50	E				
51	C				
52	B				
53	B				
54	C				
55	C				
56	A				
57	D				
58	A				
59	E				
60	B				
61	B				
62	C				
63	A				
64	D				
65	D				
66	C				
67	D				
68	B				
69	D				
70	A				
71	A				
72	D				
73	C				
74	B				
75	D				
76	C				
77	C				
78	E				
79	B				