Part I

Directions: In this collection of exercises as well as the actual test, YOU ARE NOT ALLOWED TO USE ANY DEVICE AS A CALCULATOR, for example, cellular phone, IPods, IPads, etc.

Multiple Choice. Choose the one alternative that best completes the statement or answers the question.

Simply.

1) \(240 \div 5 - 2\)
   A) 80   B) 237   C) 46   D) 233

2) \(13 + 14 \cdot 29\)
   A) 56   B) 211   C) 783   D) 419

3) \(4 \cdot 2 - 3\)
   A) 5   B) 4   C) 24   D) 11

4) \(8^2 - 5 \cdot 4\)
   A) 236   B) 96   C) 36   D) 44

5) \(14 \cdot 18 + 16 \cdot 9\)
   A) 396   B) 2412   C) 2268   D) 4284

6) \(0 \div 8 + 3 \cdot 2\)
   A) 22   B) 14   C) 6   D) Undefined

7) \(48 \div 0 + 12\)
   A) 12   B) Undefined   C) 60   D) 4

8) \(8 \cdot 3 + \{6 \div [8 - (3 + 2)]\}\)
   A) 28   B) 27   C) 25   D) 26

9) \(81 \div 3 + \{4 \cdot [18 - (7 \cdot 2)]\}\)
   A) 46   B) 33   C) 43   D) 38

10) \([27 - (4 + 6) \div 2] - [1 + 24 \div 3]\)
    A) 10   B) 20   C) 8   D) 13

11) \((67 - 11) \cdot [(80 + 10 \div 5) - (8 \cdot 8 \cdot 3 \cdot 3)]\)
    A) 1612   B) 1476   C) 1512   D) 1569

12) \(4 \cdot \{[300 - 75 \div 5] - (3 \cdot 23 - (8 \cdot 2 \cdot 3)]\}\)
    A) -628   B) 872   C) 2648   D) 822

13) \([57 - 2 \cdot 4] - [69 \div (1 + 2)]\cdot 8\)
    A) 296   B) 192   C) 256   D) 208
Practice Basic Exercises

14) \((2 + 3) [7 + (6 + 4)]\)
   A) 45      B) 18      C) 85      D) 22

15) \(7[2 + 2(2^2)]\)
   A) 1764     B) 252     C) 70      D) 126

16) \((8 + 4) [8 + (3 + 8)]\)
   A) 228      B) 608     C) 1024    D) 100

17) \(4[7^2 + 8(3 + 8)]\)
   A) 116      B) 324     C) 548     D) 2508

18) \(\frac{53+7}{3^2-4}\)
   A) 10      B) 30      C) 12      D) 18

19) \(\frac{46(11-8)-30}{3^2-3}\)
   A) 24       B) 23      C) 36      D) 18

20) \(9\sqrt{9} + 8\sqrt{36}\)
   A) 9      B) 369     C) 35      D) 75

21) \(\frac{\sqrt{64} + 8}{10 + 2 (16 - 8) - 3^2 - 9}\)
   A) 8      B) 2      C) 16      D) 64

22) \([\sqrt{16} + (7 - 3) + 9^2] - (\sqrt{9} + \sqrt{1})^2\)
   A) 72     B) 66      C) 74      D) 90

23) \((59 - 18) \cdot [(80 + 25 \div 5) - (8 \cdot 8 - 1 \cdot 1)]\)
   A) 902     B) 1002    C) 959     D) 866

24) \(5 \cdot [(300 - 75 \div 5) - [3 \cdot 28 \cdot (8 - 2 \cdot 3)]]\)
   A) 965     B) 1015    C) 2791    D) -485

Multiply. Write the answer in the simplest form.

25) \(\frac{5}{3} \cdot \frac{18}{10}\)
   A) \(\frac{25}{27}\)      B) \(\frac{5}{7}\)      C) 3      D) \(\frac{23}{13}\)
Practice Basic Exercises

26) \(\frac{4}{5} \cdot \frac{3}{7} \cdot \frac{3}{5}\)
   A) \(\frac{28}{25}\)  B) \(\frac{36}{175}\)  C) \(\frac{12}{175}\)  D) \(\frac{36}{17}\)

27) \(\frac{3}{4} \cdot \frac{17}{25}\)
   A) \(\frac{20}{29}\)  B) \(\frac{75}{68}\)  C) \(\frac{4}{3}\)  D) \(\frac{51}{100}\)

28) \(\frac{5}{1} \cdot \frac{22}{21}\)
   A) \(\frac{110}{21}\)  B) \(\frac{26}{23}\)  C) \(\frac{27}{22}\)  D) \(\frac{105}{22}\)

Divide. Write the answer in the simplest form.

29) \(\frac{2}{15} \div \frac{3}{16}\)
   A) \(\frac{31}{45}\)  B) \(\frac{32}{43}\)  C) \(\frac{32}{45}\)  D) \(\frac{30}{45}\)

30) \(\frac{3}{11} \div \frac{7}{18}\)
   A) \(\frac{53}{77}\)  B) \(\frac{52}{77}\)  C) \(\frac{54}{77}\)  D) \(\frac{18}{25}\)

31) \(\frac{1}{10} \div \frac{5}{18}\)
   A) \(\frac{9}{23}\)  B) \(\frac{7}{25}\)  C) \(\frac{8}{25}\)  D) \(\frac{9}{25}\)

32) \(\frac{4}{19} \div \frac{4}{15}\)
   A) \(\frac{15}{17}\)  B) \(\frac{13}{19}\)  C) \(\frac{15}{19}\)  D) \(\frac{14}{19}\)

33) \(\frac{5}{9} \div \frac{9}{8}\)
   A) \(\frac{14}{17}\)  B) \(\frac{40}{81}\)  C) \(\frac{5}{8}\)  D) \(\frac{13}{18}\)

34) \(\frac{15}{7} \div \frac{1}{7}\)
   A) 16  B) 14  C) \(\frac{27}{2}\)  D) 15
Practice Basic Exercises

Solve
35) A gardener wants to put a fence around a garden with sides of lengths 61 m, 17 m, 86 m, and 60 m. How much fencing must he buy?
   A) 156 m   B) 224 m   C) 292 m   D) 294 m

Solve. Write the answer in simplest form.
36) A rectangular flower bed in front of a building measures $2 \frac{2}{9}$ feet by $5 \frac{2}{5}$ feet. What is the total area of the flower bed?
   A) 12 square feet   B) 13 square feet   C) $10 \frac{4}{45}$ square feet   D) 14 square feet

Solve.
37) Ted walks around a lake on a path that is $4 \frac{6}{7}$ miles long. It takes him $1 \frac{2}{7}$ hours to complete his walk. What is his average speed (in miles per hour)?
   A) $3 \frac{8}{9}$ miles per hour   B) $3 \frac{7}{8}$ miles per hour   C) $3 \frac{2}{9}$ miles per hour   D) $4 \frac{7}{9}$ miles per hour

Solve. Write the answer in simplest form.
38) Maria exercises for $2 \frac{4}{7}$ hours every Saturday. She runs for $\frac{1}{6}$ of the times that she exercises. How much time does she spend running every Saturday?
   A) $4 \frac{3}{7}$ hours   B) $2 \frac{4}{42}$ hours   C) $3 \frac{1}{7}$ hour   D) $\frac{1}{7}$ hour

Perform the indicated operations. Round the result to the nearest thousandth if necessary.
39) Find the total distance from Fall City to Scottsville.

![Distance Diagram]

A) 60.8   B) 43.3   C) 32.7   D) 58.5

Solve.
40) Meredith got a monthly cable bill for a base rate of $18.30, an additional $5.00 for a package of movie channels, a charge of $2.33 for taxes, and a credit of $17.71 to make up for a billing error the previous month. How much was the cable bill?
   A) $46.33   B) $43.33   C) $7.92   D) $5.93
Answer Key

Part 1 Practice Test

1) C
2) D
3) A
4) D
5) A
6) C
7) B
8) D
9) C
10) D
11) C
12) B
13) D
14) C
15) C
16) A
17) C
18) C
19) D
20) D
21) B
22) B
23) A
24) B
25) C
26) B
27) D
28) A
29) C
30) C
31) D
32) C
33) B
34) D
35) B
36) A
37) C
38) C
39) D
40) C

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https://www.khanacademy.org/
Part II

Directions: In this collection of exercises as well as the actual test, YOU ARE NOT ALLOWED TO USE ANY DEVICE AS A CALCULATOR, for example, cellular phone, IPods, IPads, etc.

Multiple Choice. Choose the one alternative that best completes the statement or answers the question.

Add.

1) $32 + 14$
   A) 47   B) 46   C) 18   D) 45

2) $-4 + (-19)$
   A) 23   B) -15   C) 15   D) -23

3) $-17 + 19$
   A) -2   B) -36   C) 2   D) 36

4) $\frac{2}{5} + \left( -\frac{4}{5} \right)$
   A) $\frac{2}{5}$   B) $-\frac{6}{5}$   C) $\frac{6}{5}$   D) $-\frac{2}{5}$

Evaluate.

5) $10^2$
   A) 20   B) 1024   C) 121   D) 100

6) $10^4$
   A) 10,000   B) 1,048,576   C) 40   D) 100

Solve the equation.

7) $7x - (6x - 1) = 2$
   A) $-\frac{1}{13}$   B) 1   C) -1   D) $\frac{1}{13}$

8) $5(2x - 1) = 20$
   A) $\frac{5}{2}$   B) $\frac{3}{2}$   C) $\frac{19}{10}$   D) $\frac{21}{10}$

9) $(y - 7) - (y + 3) = 4y$
   A) -2   B) $-\frac{10}{7}$   C) $-\frac{1}{4}$   D) $-\frac{5}{2}$
Multiple Choice. Choose the one alternative that best completes the statement or answers the question.

Write the ratio as a ratio of whole numbers using fractional notation. Write the fraction in simplest form.

10) 7.6 to 10
A) $\frac{25}{19}$  
B) $\frac{19}{25}$  
C) $\frac{38}{5}$  
D) $\frac{7.6}{10}$

11) $1 \frac{2}{9}$ to $3 \frac{1}{3}$
A) $\frac{11}{30}$  
B) $\frac{11}{20}$  
C) $\frac{30}{11}$  
D) $\frac{33}{40}$

12) 6 kilometers to 21 kilometers
A) 3 kilometers  
B) $\frac{2}{7}$ kilometers  
C) 3  
D) $\frac{2}{7}$

Find the ratio described as a fraction in simplest form.

13) Find the ratio of the width to the length of the rectangular dog run sketched below.

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width = 14 meters
```

length = 20 meters

A) $\frac{7}{17}$ meters  
B) $\frac{3}{10}$ meters  
C) $\frac{7}{10}$ meters  
D) $\frac{10}{7}$ meters

Write the rate as a unit rate.

14) 299 cars in 230 households
A) 529 cars/household  
B) 0.769 car/household  
C) 69 cars/household  
D) 1.3 cars/household

15) An animal can move at 1440 feet per hour. Write this rate in feet per minute.
A) 24 ft/min  
B) $\frac{2}{5}$ ft/min  
C) 86,000 ft/min  
D) 84 ft/min

Find the proportion, find the unknown number n.

16) $\frac{24}{4} = \frac{18}{n}$
A) 6  
B) 4  
C) 18  
D) 3

17) $\frac{6}{2} = \frac{12}{n}$
A) 1  
B) 6  
C) $\frac{1}{6}$  
D) 4
Practice Basic Exercises

18) \( \frac{n}{4} = \frac{2}{3} \)

A) \( 2 \frac{2}{3} \)  
B) \( \frac{2}{3} \)  
C) \( 1 \frac{1}{3} \)  
D) \( 1 \frac{1}{2} \)

19) \( \frac{0.12}{10} = \frac{n}{0.5} \)

A) 0.006  
B) 2.4  
C) 0.012  
D) 0.06

Solve.

20) It takes Sarah 26 minutes to type and spell check 6 pages of a manuscript. Find how long it takes her to type and spell check 21 pages. Round answers to the nearest whole number if necessary.

A) 546 min  
B) 5 min  
C) 26 min  
D) 91 min

21) On an architect’s blueprint, 1 inch corresponds to 2 feet. Find the length of a wall represented by a line 4 \( \frac{1}{2} \) inches long on the blueprint. Round to the nearest tenth if necessary.

A) 4.4 ft.  
B) 9 ft.  
C) 25 ft.  
D) 225 ft.

22) It is recommended that there be at least 11.2 square feet of floor space in a classroom for every student in the class. Find the minimum floor space that 46 students require. Round to the nearest tenth if necessary.

A) 11.2 sq. ft.  
B) 24.3 sq. ft.  
C) 410.7 sq. ft.  
D) 515.2 sq. ft.

Write the percent as a decimal.

23) 69.8%  

A) 69.8  
B) 0.0698  
C) 0.698  
D) 6.98

Write the decimal as a percent.

24) 0.049  

A) 0.049%  
B) 49%  
C) 0.49%  
D) 4.9%

Write the percent as a fraction or mixed number in simplest form.

25) 60%  

A) \( 1 \frac{1}{5} \)  
B) \( \frac{3}{10} \)  
C) \( \frac{3}{5} \)  
D) 6

Write the fraction or mixed number as a percent.

26) \( \frac{3}{8} \)  

A) 38 \( \frac{1}{2} \) %  
B) 37 \( \frac{1}{2} \) %  
C) 38%  
D) 36%

Solve.

27) 0.2 is 10% of what number?

A) 20  
B) 0.2  
C) 0.02  
D) 2
Practice Basic Exercises

28) What number is 22% of 20? 
   A) 44  B) 4400  C) 4.4  D) 440

29) 11 is what percent of 50? 
   A) 2.2%  B) 2200%  C) 22%  D) 0.22%

30) The Fenner family paid 21% of the purchase price of a $87,000 home as a down payment. Determine the amount of the down payment.
   A) $183  B) $4143  C) $18,270  D) $1827

31) In a recent survey of 2500 people, 50 said that their favorite color of car was blue. What percent of the people surveyed like blue cars? 
   A) 51%  B) 50%  C) 2%  D) 3%

32) The enrollment at a local college increased by 5% over last year’s enrollment of 800. Find the current enrollment.
   A) 1200 students  B) 805 students  C) 40 students  D) 840 students

Solve. Round to the nearest tenth, if necessary.

33) The number of video stores in a region recently decreased from 130 to 104. Find the percent decrease. 
   A) 80%  B) 25%  C) 400%  D) 20%

34) A company increased the number of its employees from 200 to 285. What was the percent increase in employees? 
   A) 70.2%  B) 42.5%  C) 29.8%  D) 58.8%

Solve.

35) A blouse costs $112 and a skirt costs $59. What is the total price for purchasing these items if the sales tax rate is 8%? 
   A) $171.00  B) $184.68  C) $13.68  D) $307.80

36) A sales representative is paid a commission rate of 2.4%. Find her commission if she sold $45,140. 
   A) $1083.36  B) $18,808.33  C) $46,223.36  D) $1880.83

37) A $2400 necklace is on sale at 15% off. Find the discount. 
   A) $2040.00  B) $2364.00  C) $360.00  D) $36.00

38) A $310 painting is on sale at 35% off. Find the sale price. 
   A) $2991.50  B) $201.50  C) $10.85  D) $108.50

39) A company borrows $65,000 for 5 years at a simple interest rate of 6.5% to buy software. Find the total amount paid on the loan. 
   A) $211,250.00  B) $86,125.00  C) $67,112.50  D) $21,125.00
Solve. If needed, round money amounts to two decimal places and all other amounts to one decimal place.

40) Jeans are on sale at the local department store for 20% off. If the jeans originally cost $40 find the sale price.

A) $39.20  B) $32.00  C) $48.00  D) $8.00

41) The local clothing store marks up the price that it pays to the clothing manufacturer by 50%. If the selling price of a pair of jeans is $99, how much did the clothing store pay for the jeans?

A) $66.00  B) $148.50  C) $198.00  D) $16.50

42) A store is advertising 30% off sale on everything in the store. Find the discount of a chair that regularly sells for $210.

A) $147.00  B) $63.00  C) $203.70  D) $6.30

43) A store is advertising 10% off sale on everything in the store. Find the discount of a sofa that regularly sells for $2200.

A) $220.00  B) $22.00  C) $1980.00  D) $2178.00

Solve the inequality. Graph the solution set and write it in interval notation.

44) $5x + 2 > 4x + 12$

A) $[14, \infty)$

B) $(10, \infty)$

C) $(-\infty, 10)$

D) $(-\infty, -14]$
45) \(-6 \geq \frac{1}{7} x\)

A) \((-42, \infty)\)

B) \([-42, \infty)\)

C) \((-\infty, -42]\)

D) \((-\infty, -42)\)

46) \(-5 \leq -2x + 5 < -1\)

A) \((3, 5]\)

B) \((-5, -3]\)

C) \([-5, -3)\)

D) \([3, 5]\)
Answer Key

Part 2 Practice Test

1) B
2) D
3) C
4) D
5) D
6) A
7) B
8) A
9) D
10) B
11) A
12) D
13) C
14) D
15) A
16) D
17) A
18) D
19) A
20) D
21) B
22) D
23) C
24) D
25) C
26) B
27) D
28) C
29) C
30) C
31) C
32) D
33) D
34) B
35) B
36) A
37) C
38) B
39) B
40) B
41) A
42) B
43) A
44) B
45) C
46) A

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