

BASIC MATHEMATICS (MAT-011)
FINAL EXAM REVIEW

1) Subtract 1,697 from 90,509

2) Subtract 497 from 10,040

3) Divide 832 by 13

4) Multiply 304 by 36

EVALUATE

5) $54 - 5 \cdot 3^2$

6) $73 - (6 + 2)^2$

7) $83 - 2 \cdot 3^3$

8) $60 - 5 \times (3 + \sqrt{49})$

9) $\sqrt{81} - 9 \div 3 + 13$

10) $18 \div 3 \times \sqrt{36}$

PERFORM THE INDICATED OPERATIONS

(Express improper fraction solution as a mixed number)

11) $\frac{3}{4} + \frac{5}{12} \times \frac{16}{15}$

12) $\frac{5}{8} + \frac{5}{8} \div \frac{15}{16}$

13) $\frac{2}{3} + \frac{5}{6} \div \frac{15}{16}$

14) $1\frac{1}{2} \div 5\frac{3}{4} + \frac{17}{23}$

15) $3\frac{3}{7} \times 4\frac{2}{3} - \frac{5}{6}$

16) $1\frac{3}{8} - \frac{3}{4}$

17) $6\frac{1}{2} - 4\frac{3}{8}$

18) $4\frac{7}{9} - 2\frac{5}{6}$

19) $8\frac{5}{9} + 2\frac{5}{6}$

20) Divide 253.12 by 2.8

21) Subtract 63.5 from 240.36

22) Add 219.05 and 6.8

23) Simplify $1.53 \times 10^2 - 0.16 \times 0.03$

24) Simplify $43.6 \div 10^2 - 0.46 \times 0.2$

25) Simplify $1.53 \times 10^2 - 0.18 \div 0.03$

26) Change to Decimal notation $7\frac{4}{25}$

27) Change to Decimal notation $\frac{5}{16}$

28) Change to fraction notation 135%

29) Change to Decimal notation 125%

30) Change to fraction notation 65%

31) Change to percent notation 0.1

SIMPLIFY

32) $5 - 2\frac{1}{3}$

33) $\frac{5}{8} \times 2.4$

34) $\frac{3}{4} \div 3.6$

35) $2\frac{2}{3} - 1\frac{4}{5}$

36) $5 - 0.25$

37) $2652 \div 13$

38) $\left(\frac{1}{2}\right)^2 - \frac{1}{8} \div \frac{9}{8}$

39) $54 - 5.3^2$

SOLVE

40) 32 is 20% of what number?

44) $2\frac{1}{2} - 1.32$

41) 10 is what percent of 50?

45) $\left(\frac{3}{4} + \frac{5}{12}\right) \times \left(\frac{2}{3}\right)^2$

42) $3 - 0.126$

46) Write $\frac{48}{7}$ as a mixed number.

43) $\frac{5}{9} \times 1.44$

WORD PROBLEMS:

Ratio/Rate/Proportion

- 1) Some registered nurses earn \$141.75 for working 4.5 hours. What is the hourly rate?

- 2) If fast food workers earn \$54.60 for working 6.5 hours. What is their hourly pay rate?

- 3) Martha can do 32 math exercises in 16 minutes. At this rate, how long will it take her to do 96 exercises?

- 4) A car can travel 325 miles on 20 gallons of gas. At this rate, how far could the car travel on 12 gallons of gas?

- 5) A little league baseball team won 4 games and lost 8. What is the ratio of games lost to games played? Write your answer in simplest form.

- 6) A college soccer team won 12 games and lost 8. What is the ratio of games won to games played? Write your answer in simplest form.

- 7) Which one is a better buy?
 - a) A 15-ounce can of fruit cocktail for \$2.25 or
 - b) A 20-ounce can of fruit cocktails for \$3.40?

- 8) Bonnie paid \$3.75 for $\frac{1}{2}$ pound of shrimp. What was the unit price in dollars per pound?

- 9) One avocado costs \$2. How many can you buy with \$13?
- 10) The Scale on a map is one inch equals 150 miles. How far apart are two cities that are 2.4 inches apart on the map?
- 11) Jenny was planning a trip to the United Arab Emirates. Before going, she did some research and learned that the exchange rate is 4 Dirhams for every \$1. How many Dirhams would she get if she exchanged \$15?
- 12) To determine the number of fish in a lake, several researchers tagged 150 of the fish in a certain lake. In a sample, they found 7 out of 560 fish were tagged. About how many fish are in the lake?
- 13) I can run 5 miles in one hour. At this rate, how long will it take me to run 7 miles?
- 14) Sarah's volleyball team won 12 of their first 18 games. If they continue to win at this rate, how many games will they lose if they play 36 games?
- 15) Trisha won 4 of her 6 chess matches. If she continues to win at this rate, how many games will she win if she has 42 matches?

General Operations:

- 16) Joe is buying new carpet for this basement. If the room measures 23.2 feet by 15.8 feet and the carpet costs \$7.50 per square foot, what will he pay?
- 17) Jill is buying new tile for her bathroom. If the room measures $8\frac{2}{3}$ by $6\frac{3}{4}$ ft and the tile costs \$8 per square foot, what will she pay?
- 18) The state of Colorado is roughly the shape of a rectangle that is 273 miles by 382 miles. What is its area?
- 19) Jim is putting grass on his property which measures 100 by 95 feet. If the grass costs \$4.50 per square foot, what will he pay for the grass?

- 20) What is the perimeter of a field that measures $62\frac{2}{3}$ yards by $48\frac{1}{6}$ yards?
- 21) Mika's test scores in her biology class are 78, 93, 62, and 87. What is the average of her test scores?
- 22) Roland's grades on his art projects are 94, 100, 86, and 88. What is the average of Roland's grades?
- 23) Sears' parking lot measures 250 yards by 194 yards. Find the perimeter of the lot.
- 24) Maggie wants to make a frame for her graduation picture. The photo is 18 inches by 12 inches. If the cost of wood is \$0.25 per inch, how much will the frame cost?
- 25) Laura wants to cover the floor of her rectangular bedroom with carpet. Laura's bedroom is 15 feet in width and 24 feet in length. If the cost of carpet is \$5 per square foot, how much will it cost Laura to carpet the bedroom?
- 26) What is the average of: 4.5, 5.25, 8.95, and 7.3?
- 27) What is the average of: $2\frac{1}{2}$, $3\frac{3}{4}$, and $4\frac{1}{4}$?
- 28) Martin makes \$280 a week. If $\frac{1}{14}$ of his weekly salary is withheld for federal government taxes and $\frac{1}{10}$ of his weekly salary is withheld for state taxes, how much money does Martin take home?
- 29) Richard makes \$860 a week. If $\frac{1}{20}$ of his weekly salary is withheld for state tax and $\frac{1}{10}$ is withheld for federal government taxes, how much money does Richard take home?
- 30) A store clerk bags 2,844 items. Only 8 items are placed in a bag to fill the bag completely.
- How many bags were completely filled?
 - How many items, if any, remained after filling the bags?

31) Marcus has collected 3,600 stamps. He has a book to organize his stamps.

a) How many pages will be filled with 15 stamps?

b) How many stamps, if any, will remain?

MONEY PROBLEMS:

32) Janelle earns \$10.50 an hour for the first 40 hours she works. But, for every hour she works overtime, she gets paid time and a half. If Janelle worked 55 hours last week, how much did she earn?

33) Bert is a construction worker; he earns \$32 an hour for the first 50 hours he works. If he works 10 more hours and earns time and a half for overtime pay, how much will he get paid?

34) Stacy's family goes out to the buffet to celebrate her graduation. The bill comes \$145 and Stacy decides to leave a 15% tip.

a) How much is the tip?

b) How much is the total bill?

35) Omar receives \$12 an hour plus a 5% commission on whatever he sells. If he worked for 30 hours last week and sold \$2,000 worth of merchandise, how much did he earn for the week?

36) It's the end of the semester and John wants to celebrate. He takes his girlfriend out to an expensive restaurant where the bill comes to \$150. John wants to show his girlfriend that he's not cheap so he leaves a 20% tip.

a) How much money did John tip the waiter?

b) What's John's total bill?

37) Emily wants to purchase an iPad which retails for \$380. If the sales tax on this item is 7%. What is the total cost of this purchase?

38) The Kindle Fire Tablet costs \$199. If the sales tax is 8%, what is the checkout total?

39) Tiana works 40 hours a week for \$10 an hour. For every hour she works after 40 hours she will earn \$15 per hour. What is her weekly pay if she works for 60 hours?

40) Jules earns \$7 an hour plus an 8% commission on the dollar amount of furniture he sells. If he worked for 20 hours and sold a couch worth \$3,000, a coffee table worth \$2,000 and a kitchen table worth \$4,000, how much did he earn for the weeks?

SOLUTIONS

- 1) 88,812
- 2) 9,543
- 3) 64
- 4) 10,944
- 5) 9
- 6) 9
- 7) 29
- 8) 10
- 9) 19
- 10) 36
- 11) $1\frac{7}{36}$
- 12) $1\frac{7}{24}$
- 13) $1\frac{5}{9}$
- 14) 1
- 15) $15\frac{1}{6}$
- 16) $\frac{5}{8}$
- 17) $2\frac{1}{8}$
- 18) $1\frac{17}{18}$
- 19) $11\frac{7}{18}$
- 20) 90.4
- 21) 176.86
- 22) 225.85
- 23) 152.9952
- 24) 0.344
- 25) 147
- 26) 7.16
- 27) 0.3125
- 28) $1\frac{7}{20}$
- 29) 1.25
- 30) $\frac{13}{20}$

- 31) 10%
- 32) $\frac{8}{3}$ or $2\frac{2}{3}$
- 33) 1.5
- 34) $0.208\bar{3}$
- 35) $\frac{13}{15}$
- 36) 4.75
- 37) 204
- 38) $\frac{5}{36}$
- 39) 25.91
- 40) 160
- 41) 20%
- 42) 2.874
- 43) 0.80
- 44) 1.18
- 45) $\frac{14}{27}$
- 46) $6\frac{6}{7}$

Ratio/Rate/Proportion:

- 1) \$31.50
- 2) \$8.40
- 3) 48 *minutes*
- 4) 195 *miles*
- 5) 2:3 or $\frac{2}{3}$
- 6) 3:5 or $\frac{3}{5}$
- 7) a) 15-ounce can
- 8) \$7.50
- 9) 6 *avocados*
- 10) 360 *miles*
- 11) 60 *Dirhams*
- 12) 12,000 *fish*
- 13) 1 *hour 24 min*

- 14) 12 *games*
- 15) 28 *games*
- 38) \$214.92
- 39) \$700
- 40) \$860

General Operations:

- 16) \$2,749.20
- 17) \$468
- 18) 104,286 *square miles*
- 19) \$42,750

Word Problem Solution:

- 20) $221\frac{2}{3}$ *yards*
- 21) 80
- 22) 92
- 23) 888 *yards*
- 24) \$15
- 25) \$1,800
- 26) 6.5
- 27) $3\frac{1}{2}$
- 28) \$232
- 29) \$731
- 30) a) 355 bags
b) 4 items
- 31) a) 240 pages
b) 0

Currency Problems:

- 32) \$656.25
- 33) \$2,080
- 34) a) \$21.75
b) \$166.75
- 35) \$460
- 36) a) \$30
b) \$180
- 37) \$406.60