

Math 2008
Unit IV Practice Test (Chapters 7-8)

Name _____

Show work to support your solutions, whenever possible.

1. Convert to a simplified fraction or mixed number.

(a) 0.73

(b) 3.6

(c) 0.125

2. Convert to a decimal. (Give an exact answer — No rounding.)

(a) $\frac{11}{25}$

(b) $\frac{5}{22}$

(c) $\frac{8}{3}$

(d) $\frac{7}{4}$

(e) $\frac{1}{9}$

3. Write in scientific notation.

(a) 5,730,000,000,000

(b) 0.000000098 m

(c) 93,000,000 miles

(d) $\frac{350}{10^6}$

(e) $49.5 \cdot 10^5$

(f) $20.4 \cdot \frac{10^6}{10^{-6}}$

4. Write as a decimal.

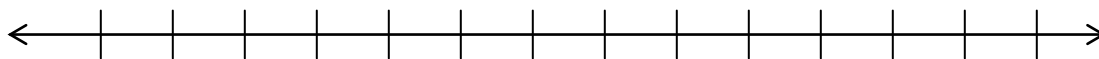
(a) $5.3 \cdot 10^{-2}$

(b) $7.25 \cdot 10^8$

(c) $6.275 \cdot 10^0$

5. On the real number line, graph the approximate location of the following numbers, using the given letters.

A -1.5 B $4\frac{1}{3}$ C $1.\bar{6}$ D 0 E $-\sqrt{5}$ F π



6. Round each of the following numbers as specified.

(a) 307.625 to the nearest hundredth _____

(b) 307.625 to the nearest unit _____

(c) 1,099.7843 to the nearest hundredth _____

(d) 1,099.7843 to the nearest tenth _____

7. Compare, using $<$, $>$, or $=$ to make the statement true.

(a) $2.\overline{24}$ _____ $\sqrt{5}$ (b) 3.2 _____ 3.200 (c) 0.00986 _____ 0.01

8. Convert to a simplified fraction or mixed number.

(a) 0.74 (b) 1.4 (c) 0.12

9. Convert to a terminating or repeating decimal.

(a) $\frac{7}{25}$ (b) $\frac{4}{11}$ (c) $\frac{11}{16}$

10. Write the following as a decimal number.

$$3 \times 10^4 + 2 \times 10^2 + 6 \times 10 + 4 + 3 \times 10^{-1} + 2 \times 10^{-2} + 6 \times 10^{-4} = \underline{\hspace{2cm}}$$

11. Write the following in words.

(a) 12.0034

(b) 0.005

12. You see a sign in Wal-Mart advertising “Carnations for 0.33¢ apiece”. Discuss the mathematical meaning of this ad.



13. Complete the magic square below so that each row, column and diagonal has the same sum.

		8.8
	6.8	
4.8		0.8

14. Martha bought 30 lb of nuts at \$3.00/lb and 20 lb of nuts at \$5.00/lb. What is the average price per pound that she spent on the nuts?

15. Florence Griffith-Joyner set a world record for the women’s 200-m dash at the 1988 Summer Olympics in Seoul, South Korea. She covered the distance in 21.34 sec. If 1 m is equivalent to 39.37 in., find her speed to the nearest tenth of a mile per hour.



16. Complete the following sequences:

(a) 0.9, 1.8, 2.7, 3.6, _____ , _____

(b) 0.3, 0.6, 1.2, 2.4, _____ , _____

17. Simplify : (a) $\sqrt{40}$

(b) $\sqrt{75}$

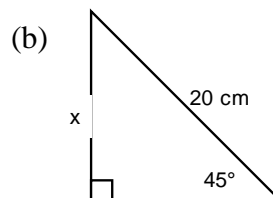
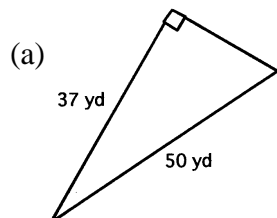
18. Calculate $\sqrt{24}$ to 3 decimal places.

19. Find the least or greatest possible products for the expression using the digits 1 through 9. Each digit may be used only once in each part.

(a) $\square . \square \times \square$
Least product

(b) $\square . \square \times \square . \square$
Greatest product

20. Find the missing side for each right triangle. Round your answer like the given measurements.



21. Classify each of the following numbers as rational or irrational.

(a) $0.23233233323333 \dots$ _____

(b) $\frac{4}{11}$ _____

(c) $\frac{\sqrt{2}}{2}$ _____

22. A board is 442.4 cm long. How many shelves can be cut from it if each shelf is to be 55.3 cm long? Disregard the width of the cuts caused by the saw blade.

23. If the given sequence is geometric, find the missing terms(s).

(a) 4, _____, 16

(b) 1, _____, _____, 0.125

24. Order the given list from least to greatest.

0.95, 0.955, $0.\overline{95}$, $0.\overline{95}$, $0.\overline{959}$, 0.9 _____

25. Solve for x.

(a) $\frac{3}{8} = \frac{x}{50}$

(b) $\frac{4}{x} = \frac{x}{9}$

(c) $\frac{7}{16} = \frac{x}{40}$

[Hint: There are 2 solutions.]

(d) $\frac{-3}{8} = \frac{x}{1000}$

(e) $\frac{21}{32} = \frac{x}{82}$

(f) $\frac{48}{90} = \frac{x}{162}$

[Round to nearest whole.]

[Round to nearest whole.]

26. Solve for x.

(a) $\frac{7}{12} = \frac{x}{100}$

(b) $\frac{\frac{1}{2}}{\frac{1}{3}} = \frac{\frac{3}{2}}{x}$

(c) $\frac{\$3.59}{17.5 \text{ oz}} = \frac{x}{1 \text{ oz}}$

[Round to nearest hundredth.]

27. To estimate the number of fish in a lake, scientists use a tagging and recapturing technique. Suppose 180 fish were captured, tagged, and released. Then 60 fish were recaptured, and among them 21 were found to be tagged. Estimate the number of fish in the lake.



28. Bill got 62 answers correct on an 80-question multiple-choice test. What percent did he answer correctly? Round to the nearest percent.

29. The ratio of boys to girls in Mr. Goode's class is 3 to 5. There are 15 girls in Mr. Goode's class. How many boys are in his class?

30. Tom tossed a coin 30 times and counted 17 “heads”.

(a) What is the ratio of heads to coin tosses?

(b) What is the ratio of heads to tails?

31. Convert to a simplified fraction.

(a) 74%

(b) $6\frac{1}{2}\%$

(c) 12.3%

32. Convert to a terminating or repeating decimal.

(a) 20%

(b) 275%

(c) $33\frac{1}{3}\%$

33. Convert to a percent.

(a) $\frac{5}{16}$

(b) $\frac{13}{15}$

(c) $\frac{11}{20}$

(d) 0.76

(e) 0.0123

(f) $0.4\overline{53}$

34. Which bottle of juice is the better buy (in terms of cost per ounce): 48 fl oz for \$3.05 or 64 fl oz for \$3.60?

35. Eighteen-karat gold contains 18 parts (grams) gold and 6 parts (grams) other metals. Amy’s new ring contains 12 parts gold and 4 parts other metals. Is the ring 18-karat gold?

36. A recipe for fruit salad serves 4 people. It calls for 3 oranges and 16 grapes. How many oranges and grapes do you need in order to serve 12 people?
37. If the scale on a drawing is 1 cm : 2.5 m, what is the length of a house if it measures 3 cm on the scale drawing (blueprint)?
38. Two car dealers, Al and Bart, have the same car that was listed at \$20,000. Al offers a \$1,500 rebate and would negotiate a further 8% discount after rebate. Bart offers an 8% discount and would negotiate a further \$1,500 rebate. Which dealer has the lowest price?



39. In water (H_2O), the ratio of the weight of oxygen to the weight of hydrogen is approximately 8 : 1. How many ounces of hydrogen are in 1 lb of water?
40. During 1998, the Braves won 106 games and lost 56 games.
- (a) What is the ratio of games won to games lost?
- (b) What percent of total games played did they win? Round to the nearest tenth of a percent.
41. Give exact answers for each of the following.
- (a) 6 is what percent of 24? (b) What is 320% of 60?
- (c) 17 is 30% of what number? (d) 0.2 is what percent of 1?
42. Five computers in a shipment of 150 were found to be defective. What percent of the computers were defective?

43. On a mathematics examination, a student missed 8 of 70 questions. What percent of the questions, rounded to the nearest tenth of a percent, did the student do correctly?
44. An iPod touch regularly sells for \$229. A local store offers a 20% discount. What is their sale price?
45. The student bookstore had a textbook for sale at \$89.95. A student found the book on eBay for \$62.00. If the student bought the book on eBay, what percentage of the cost of the bookstore book did the student save? Round to the nearest percent.
- *46. A company was offered a \$30,000 loan at a 12.5% annual interest rate for 4 years. Find the simple interest due on the loan at the end of 4 years.
- *47. A fund pays 8% annual interest compounded quarterly. What is the value of a \$10,000 investment after 3 years?

Do your best! Rise to the challenge! Live and learn!