

T 102 Practice Exam Chapters 7 & 8

- 1) Rewrite $4 \cdot 10^3 + 3 \cdot 10^{-3}$ as a decimal. 1)
- 2) Write 21.034 in words. 2)
- 3) Mentally determine whether each of the following represent terminating decimals. Answer YES or NO. Explain your answer. 3)
- a. $\frac{7}{12}$ b. $\frac{17}{52.23}$ c. $\frac{12}{15}$
- 4) Find the next three terms for the following sequence 4)
0.3, 1.4, 2.5, 3.6, 4.7, _____, _____, _____
- 5) Convert 3.4×10^{-6} to standard numerals. 5)
- 6) Perform the indicated operation and write your answer in **scientific notation**. 6)
 $(7 \times 10^{-3})(6 \times 10^{-5})$
- 7) Round each of the following numbers as specified. 7)
- a. 406.792 to the nearest hundredths.
- b. 406.792 to the nearest tens.
- 8) Use long division to find the following quotient. DO NOT USE YOUR CALCULATOR. 8)
SHOW ALL WORK.
 $232.2 \div 4.5$
- 9) WITHOUT USING A CALCULATOR multiply the following. **Show all work. Explain how your decimal placement in your answer.** 9)
- 3.78×7.4 .
- 10) Place $<$, $>$, or $=$ in the space between each of the following pairs to make true statements. 10)
- a) $3.\overline{45}$ _____ $\sqrt{12}$ b. $2.\overline{9}$ _____ 3 c. $5.\overline{89}$ _____ $5.\overline{89}$

- 11) Stephanie want to buy some camera equipment to take pictures on her daughter's birthday. To estimate the total cost, she rounds each price to the **nearest dollar** and adds the rounded prices. What is her estimate for the items listed below? Show how you arrived at your answer. 11)

CAMERA \$75.80
 FILM 5.65
 CASE 22.89
 BATTERY 15.89

- 12) Convert each of the following rational numbers to the form $\frac{a}{b}$, where a and b are integers and b \neq 0. Show work to justify your answer. 12)

and b are integers and b \neq 0. Show work to justify your answer.

- a) 0.29 _____ b) $0.\overline{56}$ _____
 c) $0.4\overline{5}$ _____ d) $-2.4\overline{83}$ _____

- 13) Convert each of the following fractions to their decimal forms. 13)

- a. $\frac{4}{11}$ _____ b. $\frac{7}{40}$ _____ c. $\frac{4}{21}$ _____

- 14) If the following letters correspond to the sets listed in the table below, complete the following table by placing checkmarks in the appropriate columns. N is the set of natural numbers, I is the set of integers, Q is the set of rational numbers, R is the set of real numbers and S is the set of Irrational numbers. 14)

Number	N	I	Q	R	S
-4					
$5.\overline{8}$					
$\sqrt{6}$					
$2\frac{1}{4}$					

- 15) Write each of the following in the simplest form $a\sqrt[n]{b}$, where a and b are integers, and b has the least value possible. 15)

- a. $\sqrt{120}$ _____ b. $\sqrt[3]{81}$ _____

16) Susie's Bicycle shop advertised a bicycle for 15% off for a savings of \$24. The bicycle did not sell so it was offered at a new 20% discount off the sale price. (6 points) 16) a.

- a. What did the bicycle sell for regularly?
- b. What is the amount of the new discount?

17) Fill in the blanks. 17)

	PERCENT	DECIMAL	FRACTION
a.	83%		
b.		4.78	
c.			$4\frac{1}{2}$

18) The price of a suit was \$200 and it was reduced by 30%. By what percent must the price of the suit be increased to bring the price back to \$200? Round your answer to the nearest percent. 18)

19) Convert each percent to decimals. 19)

- a. 17% _____
- b. $\frac{1}{4}$ % _____
- c. 250% _____

Find the a) simple interest and the b) final value of the deposit that earns the given rate for the indicated length of time. Round your answers to the nearest cent.

20) \$8116 earning 11% for 2.7 years 20)

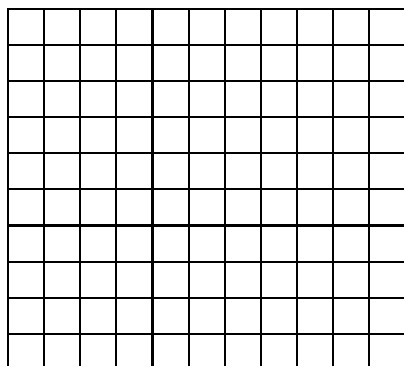
21) June made an initial deposit of \$5000 in an account for her son. Assuming an interest rate of 8% compounded quarterly, how much will the account be worth in 15 years? Round to the nearest cent. (4 points) 21)

22) For which values of x can $\frac{x}{3500}$ be written as a terminating decimal? 22)

Explain your reasoning.

- 23) Use the following 100 grid to explain how to solve the following problem. **Explain** how you used your model to determine your answer. 23)

Because of the flu, 225 of the school's 900 were absent yesterday. What percent of the students were absent?



Rewrite the following in expanded form.

- 24) 9.000738 24)

Rewrite as a numeral.

- 25) Three thousand and twenty-two hundred-thousandths 25)

Write the terminating decimal as a fraction.

- 26) 7.9 26)

Rewrite as a terminating decimal.

- 27) $\frac{3}{16}$ 27)

- 28) The distance from the downtown station to the last stop on a commuter railroad line is 16.8 miles. The distance between stops is about 1.2 miles. How many stops are there? 28)

Write the fraction in decimal notation.

- 29) $\frac{3}{7}$ 29)

Order the decimals from least to greatest.

- 30) $0.\overline{161816}$, $0.\overline{1618}$, $0.\overline{16}$, $0.\overline{1618}$ 30)

- 31) What is the 100th digit after the decimal point in the following repeating decimal? 31)
 $0.\overline{738401}$

Rewrite the following as indicated.

- 32) $\frac{1}{8}$ (Write as a percent.) 32)
- 33) A hardware store had monthly sales of \$74,000 and spent 28% of it on freight costs. How much was spent on freight costs? 33)

Solve the problem.

- 34) The appliance store where the Scott family shops offers a 8% discount for paying cash. The Scott family received a discount of \$49. What was their total bill before the discount? Round your answer to the nearest dollar. 34)
- 35) Alex has saved \$560 at the bank. He wants to accumulate \$1750 for a trip to soccer camp. What percent of his goal has been reached? 35)
- 36) The price of a printer was reduced from \$400 to \$160. What was the percent of decrease? 36)
- 37) After receiving a discount of 15.5% on its bulk order of typewriter ribbons, John's Office Supply pays \$6084. What was the price of the order before the discount? 37)
- 38) The price of an item is reduced by 20% in a sale. Two weeks later the price is increased to 20% more than the sale price. Do you think that the item has been restored to its original price? If not, do you think its price is now higher or lower than the original price? Explain your thinking. 38)

Provide an appropriate response.

- 39) Roberto is an employee of a store and receives 20% discount off all items in the store. During a sale, the price of a jacket is reduced by \$15. Roberto will receive both his 20% discount and the \$15 off. Which is better for Roberto, to take the 20% discount first and then subtract \$15 or to subtract \$15 first and then take his 20% discount? Explain you answer. 39)

Find the compound interest earned by the deposit. Round to the nearest cent.

- 40) \$6440 at 5% compounded semiannually for 6 years 40)

Decide if the number is rational or irrational.

41) 1.25242926... 41)

Simplify the radical.

42) $\sqrt{12}$ 42)

43) **Round as indicated.** 43)

- a. 459.00658 to the nearest hundredth.
- b. 459.00658 to the nearest ten
- c. 459.00658 to the nearest ten thousandths.

44) Solve for x in the following, where x is a rational number. 44)

- a. $3^x = 243$
- b. $16^x = 2$
- c. $3^x = \frac{1}{3}$

45) Model the following statements with base ten pieces(or a hundred grid). 45)
Make a sketch of your model, find the answer to the question and explain how you arrived at the answer using your model.

Susan bought a sweater on sale for \$420. This price is 30% off the regular price. Find the regular price.

46) You just put \$3191 in a CD that is expected to earn 17% compounded quarterly, and \$7877 in a savings account that is expected to earn 2% compounded quarterly. Determine when, to the nearest year, the values of your two investments will be the same. 46)

Answer Key

Testname: PRACTICE EXAM 2 CHAPTER 7 & 8

- 1) 4000.003
- 2) Twenty-one and thirty-four thousandths
- 3) a. No b. Yes c. Yes
- 4) 5.8, 6.9, 8
- 5) 0.0000034
- 6) 4.2×10^{-7}
- 7) a. 406.79 b. 410
- 8) 51.6
- 9) 27.972
- 10) a. < b. = c. >
- 11) $\$76 + \$6 + \$23 + \$16 = \$121$
- 12) $\frac{29}{100}$ b. $\frac{56}{99}$ c. $\frac{41}{90}$ d. $-2\frac{479}{990}$
- 13) a. $\overline{.)36}$ b. 0.175 c. $\overline{0.190476}$

14)

Number	N	I	Q	R	S
-4		x	x	x	
$5.\overline{8}$			x	x	
$\sqrt{6}$				x	x
$2\frac{1}{4}$			x	x	

- 15) a. $2\sqrt{30}$ b. $3\sqrt[3]{3}$
- 16) \$160 b. \$27.20
- 17)

	PERCENT	DECIMAL	FRACTION
a.	83%	0.83	$\frac{83}{100}$
b.	478%	4.78	$\frac{239}{50}$
c.	450%	4.5	$4\frac{1}{2}$

- 18) 43%
- 19) a. 0.17 b. 0.0025 c. 2.50
- 20) \$2410.45; \$10,526.45
- 21) \$16,405.15
- 22) 7, 14, 35, 70, 175

Answer Key

Testname: PRACTICE EXAM 2 CHAPTER 7 & 8

- 23) 100 grid represents 900
1 column represents 90
1 small square represents 9
Therefore 225 is 2 columns and 5 squares $2(90) + 5(9) = 180 + 45$
2 columns and 5 small square is 25% of the grid. Thus the answer is 25%.
- 24) $9 \cdot 10^0 + 0 \cdot 10^{-1} + 0 \cdot 10^{-2} + 0 \cdot 10^{-3} + 7 \cdot 10^{-4} + 3 \cdot 10^{-5} + 8 \cdot 10^{-6}$
- 25) 3000.00022
- 26) $\frac{79}{10}$
- 27) 0.1875
- 28) 14 stops
- 29) $0.\overline{428571}$
- 30) $0.\overline{16}$, $0.\overline{161816}$, $0.\overline{1618}$, $0.\overline{1618}$
- 31) 4
- 32) $12\frac{1}{2}\%$
- 33) \$20,720
- 34) \$613
- 35) 32%
- 36) 60%
- 37) \$7200
- 38) Answers will vary. Possible answer: The item has not been restored to its original price. Its price is now lower than the original price. The amount of the increase was less than the amount of the discount because 20% of the sale price is a smaller amount than 20% of the original price.
- 39) Answers will vary. It is better for Roberto to take his 20% discount first.
- 40) \$2221.08
- 41) Irrational
- 42) $2\sqrt{3}$
- 43) a. 459.01
b. 460
c. 459.0066
- 44) a. 5 b. $\frac{1}{4}$ c. -1
- 45) \$600
- 46) 6 years