

1. What measure will most accurately portray the salary of a typical worker at this store?

\$24 \$25 \$29 \$29 \$36 \$38 \$42 \$88 \$93

- (a) median
- b. mode
- c. variance
- d. mean

since \$88 and \$93 are outliers (larger number)

2. Lucy borrows \$4500 and agrees to pay it back in 6 years. If the simple interest rate is 4%, find the total amount she pays back.

- a. \$1080
- b. \$10,800
- c. \$15,300
- (d) \$5580

$$I = Prt$$

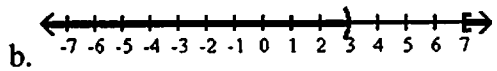
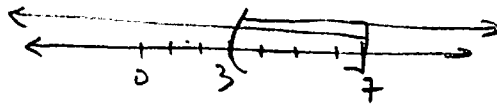
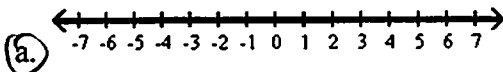
$$= 4500(0.04)(6)$$

$$= 1080$$

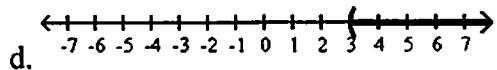
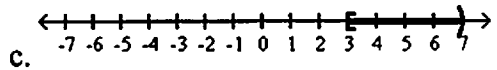
$$\text{Total} = 4500 + 1080$$

$$= 5,580$$

3. Graph the inequality.  $x > 3$  or  $x \leq 7$



The entire number line is included



4. If 7 sandwich rolls cost \$1.33, how much will 21 rolls cost?

- a. \$11.31
- b. \$4.99
- c. \$9.31
- (d) \$3.99

$$\frac{\$1.33}{7} = \frac{x}{21}$$

$$7x = 21(1.33)$$

$$7x = 27.93$$

$$x = 3.99$$

5. Sam is running a fever of  $104.2^\circ F$ . Find this temperature as it would be shown on a Celsius thermometer.

- a.  $75.7^\circ C$
- b.  $155.6^\circ C$
- (c)  $40.1^\circ C$
- d.  $219.6^\circ C$

$$F = 104.2 \quad C = \frac{5}{9}(F - 32)$$

$$= \frac{5}{9}(104.2 - 32)$$

$$= \frac{5}{9}(72.2)$$

$$= 40.1$$

6. A refrigerator sells for \$969. If the sales tax rate is 9.3%, what is the total price?

- a. \$901.17
- b. \$90.12
- (c) \$1059.12
- d. \$1870.17

$$\text{Sales tax} = 969(0.093) \quad \text{Total} = 969 + 90.12$$

$$= 90.12 \quad = 1059.12$$

7. Write 0.061 as a percent.

- a. 61%
- b. 6.1%
- c. 0.61%
- d. 0.061%

$$\begin{aligned} 0.061 &= 0.061 (100\%) \\ &= 6.1\% \end{aligned}$$

8. What number is 20% of 36?

- a. 720
- b. 72
- c. 0.72
- d. 7.2

$$\begin{aligned} x &= 20\% (36) \\ &= 0.2 (36) \\ &= 7.2 \end{aligned}$$

9. Convert 3700 mm to meters.

- a. 37 m
- b. 3.7 m
- c. 370 m
- d. 0.37 m

$$\begin{array}{cccc} & m & dm & cm & mm \\ & \leftarrow & \leftarrow & \leftarrow & \\ 3700 & \div & 1000 & & \\ & = & 3.7 & m & \end{array}$$

10. Write 93,673 in words.

- a. ninety-three thousand, six hundred seventy three
- b. ninety thousand, six hundred seventy-three
- c. ninety-three thousand, sixty-seven hundred, three
- d. nine thousand, six hundred seventy three.

11. Add:  $5941 + 7887 + 3941$

- a. 17,800
- b. 18,000
- c. 17,769
- d. 16,000

$$\begin{array}{r} \phantom{0}^2 \phantom{0}^1 \\ 5941 \\ 7887 \\ + 3941 \\ \hline 17769 \end{array}$$

12. Amy teaches test preparation lessons for \$45 per student for a 6-week session. For one group of students, she collects \$1620. Find how many students are in the group.

- a. 38 students
- b. 40 students
- c. 36 students
- d. 26 students.

$$\begin{aligned} \$1620 &\div 45 \\ &= 36 \end{aligned}$$

13. Write the fraction as decimal:  $\frac{8}{15}$

- a. 0.534
- b. 0.533
- c. 0.532
- d. 0.333

$$\begin{array}{r} 0.53\overline{3} \\ 15 \overline{) 8.00} \\ \underline{75} \phantom{0} \\ 50 \\ \underline{45} \\ 5 \end{array}$$

14. Subtract 0.0182 from 53.

- a. 52.9818
- b. 53.0818
- c. 52.4818
- d. 53.0182

$$\begin{array}{r} 299910 \\ 53.0000 \\ - 0.0182 \\ \hline 52.9818 \end{array}$$

15. Pete is driving across country from Boston to Seattle. He keeps a record of the distance that he drives each day.

Monday	458 miles	}
Tuesday	216 miles	
Wednesday	269 miles	
Thursday	308 miles	
Friday	297 miles	

What was his total mileage for the first three days of the week?

- a. 1548 miles
- b. 933 miles
- c. 1043 miles
- d. 943 miles

$$\begin{array}{r} 458 \\ 216 \\ + 269 \\ \hline 943 \end{array}$$

16. A company increased the number of its employees from 100 to 125. What was the percent increase in employees?

- a. 25%
- b. 20%
- c. 55.6%
- d. 80%

$$125 - 100 = 25$$

$$\begin{aligned} \% \text{ increase} &= \frac{25}{100} \cdot 100 \\ &= 25\% \end{aligned}$$

17. Write 23.6% as decimal.

- a. 2.36
- b. 0.0236
- c. 0.236
- d. 23.6

$$23.6\% = 0.236$$

18. An accountant is given the following spreadsheet of expenses and income for a company. What is the final balance?

Description of expenses	Amount	Description of assets/income	Amount
Payroll	\$ 29,280	Checking acct	\$ 60,071
Utilities	\$ 989	income	\$ 41,889
Water	\$ 262		
Waste disposal	\$ 3603		
New inventory	\$ 54,089		

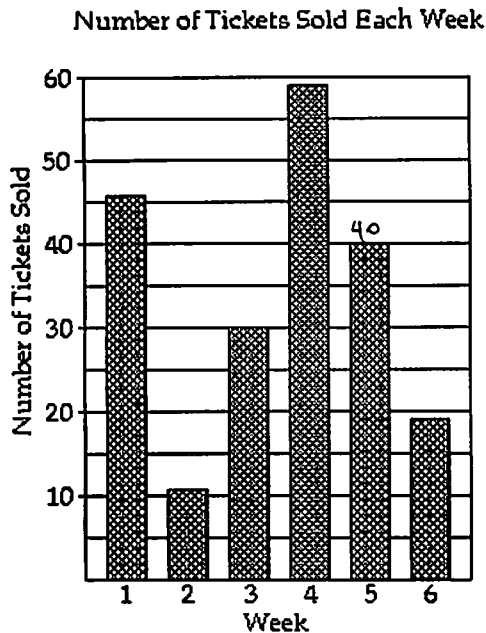
$$\text{total } 101,960$$

$$\text{Total } 88,223$$

- a. \$190,183
- b. \$43,017
- c. \$72,297
- d. \$13,737

$$\begin{aligned} \text{net} &= 101,960 - 88,223 \\ &= 13,737 \end{aligned}$$

19. The bar graph shows the number of tickets sold each week by the garden club for their annual flower show.



How many tickets were sold during week 5?

- a. 19 tickets
- b. 11 tickets
- c. 40 tickets
- d. 46 tickets

20. The table below shows the soft drinks preferences of people in three age groups.

	cola	root beer	lemon-lime
under 21 years of age	40	25	20
between 21 and 40	35	20	30
over 40 years of age	20	30	35 = 85

If one of the 255 subjects is randomly selected, find the probability that the person is over 40 years of age.

- a.  $\frac{1}{2}$
- b.  $\frac{3}{5}$
- c.  $\frac{2}{5}$
- d.  $\frac{1}{3}$

$$P(\text{over 40}) = \frac{85}{255}$$

$$= \frac{1}{3}$$

21. A particular vitamin comes in 850 milligram tablets. Convert this to ounces. Round answer to the nearest thousandth, if necessary.

- a. 30.005 oz.
- b. 0.034 oz.
- c. 0.34 oz.
- d. 8500 oz.

$$850 \text{ mg} \cdot \frac{1 \text{ g}}{1000 \text{ mg}} \cdot \frac{0.04 \text{ oz}}{1 \text{ g}} = 0.034 \text{ oz.}$$

22. Find the sale price when the original price is \$ 75.00 and the discount rate is 31%.

- a. \$23.25
- b. \$51.75
- c. \$33.25
- d. \$72.67

$$\begin{aligned} \text{discount} &= 75(0.31) & \text{Sale price} &= 75 - 23.25 \\ &= 23.25 & &= 51.75 \end{aligned}$$

23. Write the following number in scientific notation.

A computer compiles a program in 0.00000549 seconds.

- a.  $5.49 \times 10^{-6}$
- b.  $5.49 \times 10^{-8}$
- c.  $5.49 \times 10^{-7}$
- d.  $5.49 \times 10^5$

$$0.00000549 = 5.49 \times 10^{-6}$$

24. Solve for r:  $A = P(1+nr)$

- a.  $r = \frac{P-A}{Pn}$
- b.  $r = \frac{A}{n}$
- c.  $r = \frac{Pn}{A-P}$
- d.  $r = \frac{A-P}{Pn}$

$$\begin{aligned} A &= P(1+nr) \\ A &= P + Pnr \\ A - P &= Pnr \\ \frac{A - P}{Pn} &= r \end{aligned}$$

25. Solve:  $0.4 = 24.2 - x$

- a. 24.1
- b. 23.8
- c. 23.3
- d. 24.6

$$\begin{aligned} 0.4 &= 24.2 - x \\ x &= 24.2 - 0.4 \\ &= 23.8 \end{aligned}$$

26. Convert 37 kilograms to pounds.

- a. 30.15 pounds
- b. 170.18 pounds
- c. 147.4 pounds
- d. 81.4 pounds.

$$\begin{aligned} 1 \text{ kg} &\approx 2.2 \text{ lbs} \\ \frac{37 \text{ kg}}{1} \cdot \frac{2.2 \text{ lb}}{1 \text{ kg}} &= 81.4 \text{ lbs} \end{aligned}$$

27. Solve the proportion:  $6:17 = x:51$

- a. 24
- b. 18
- c. 2
- d.  $144\frac{1}{2}$

$$\begin{aligned} \frac{6}{17} &= \frac{x}{51} \\ 17x &= 6(51) \\ 17x &= 306 \\ x &= 18 \end{aligned}$$

28. Divide:  $-\frac{2}{7} \div \frac{4}{5}$

a.  $\frac{14}{5}$

b.  $-\frac{5}{14}$

c.  $\frac{5}{14}$

d.  $-\frac{8}{35}$

$$-\frac{2}{7} \div \frac{4}{5}$$

$$= -\frac{2}{7} \cdot \frac{5}{4}$$

$$= -\frac{5}{14}$$

29. After watching a DVD from the local rental store you decided to sit through the credits. You notice the copyright date expressed as MCMLXXVII. When was the movie made?

a. 1977

b. 1978

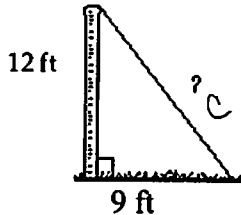
c. 1927

d. 1928

$$= 1000 + 900 + 50 + 20 + 5 + 2$$

$$= 1977$$

30. One end of a guy wire is attached to the top of a 12-foot pole and the other end is anchored into the ground 9 feet from the base of the pole. Find the length of the guy wire. If necessary, round to the nearest tenth foot.



a. 21.1 feet

b. 21 feet

c. 15 feet

d. 15.1 feet.

$$12^2 + 9^2 = c^2$$

$$144 + 81 = c^2$$

$$225 = c^2$$

$$15 = c$$

31. A high school graduating class is made up of 435 students. There are 101 more girls than boys. How many boys are in the class?

a. 167 boys

b. 101 boys

c. 268 boys

d. 435 boys

$$\text{Boys} = x$$

$$\text{Girls} = x + 101$$

$$x + x + 101 = 435$$

$$2x + 101 = 435$$

$$2x = 334$$

$$x = 167$$

32. Solve the absolute-value inequality:  $|x+9| > 4$ .

- a.  $(-5, \infty)$
- b.  $(-\infty, -13) \cup (-5, \infty)$
- c.  $\emptyset$
- d.  $(-13, -5)$

$$|x+9| > 4$$
$$\Rightarrow x+9 > 4 \text{ or } x+9 < -4$$
$$x > -5 \text{ or } x < -13$$

33. Write the sentence as an equation.

“Seven times the difference of 13 and a number  $x$  gives -7.”

- a.  $7(x-13) = -7$
- b.  $7(13-x) = -7$
- c.  $7(13) - x = -7$
- d.  $7x - 13 = -7$

$$7(13-x) = -7$$

34. Solve the equation:  $\frac{x}{7} = \frac{x}{2} + \frac{1}{7}$ .

- a.  $-\frac{2}{5}$
- b. 0
- c.  $-\frac{1}{7}$
- d.  $-\frac{5}{2}$

$$\frac{x}{7} = \frac{x}{2} + \frac{1}{7}$$

$\xrightarrow{\times 14}$

$$14 \cdot \frac{x}{7} = 14 \cdot \frac{x}{2} + 14 \cdot \frac{1}{7}$$

$$2x = 7x + 2$$

$$-5x = 2$$

$$x = -\frac{2}{5}$$