

# KEYSTONE EXAM REVIEW PACKET 1

Name \_\_\_\_\_

Period \_\_\_\_\_

1. \_\_\_\_\_ Which number is irrational?

A.  $\sqrt{9}$       B.  $\sqrt{8}$   
C. 0.3333      D.  $\frac{2}{3}$

2. \_\_\_\_\_ David bought a CD that cost \$18.99 and paid \$20.51, including sales tax. What was the rate of the sales tax?  
A. 5%      B. 3%  
C. 2%      D. 8%

3. \_\_\_\_\_ On February 18, from 9 a.m. until 2 p.m., the temperature rose from  $-14^{\circ}\text{F}$  to  $36^{\circ}\text{F}$ . What was the total increase in temperature during this time period?

A.  $50^{\circ}$       B.  $36^{\circ}$   
C.  $32^{\circ}$       D.  $22^{\circ}$

4. \_\_\_\_\_ What is the value of  $\frac{x^2 - 4y}{2}$ , if  $x = 4$  and  $y = -3$ ?

A. -2      B. 2  
C. 10      D. 14

5. \_\_\_\_\_ What is a common factor of  $x^2 - 9$  and  $x^2 - 5x + 6$ ?

A.  $x + 3$       B.  $x - 2$   
C.  $x - 3$       D.  $x^2$

6. \_\_\_\_\_ What is the sum of  $\frac{2}{x}$  and  $\frac{x}{2}$

A. 1      B.  $\frac{4+x}{2x}$   
C.  $\frac{2+x}{2x}$       D.  $\frac{4+x^2}{2x}$

7. \_\_\_\_\_ If  $2x^2 - x + 6$  is subtracted from  $x^2 + 3x - 2$ , the result is

A.  $x^2 + 2x - 8$

B.  $-x^2 + 2x - 8$

C.  $x^2 - 4x + 8$

D.  $-x^2 + 4x - 8$

8. \_\_\_\_\_ The expression  $(a^2 + b^2)^2$  is equivalent to

A.  $a^4 + b^4$

B.  $a^4 + 2a^2b^2 + b^4$

C.  $a^4 + a^2b^2 + b^4$

D.  $a^4 + 4a^2b^2 + b^4$

9. \_\_\_\_\_ In the coordinate plane, the points  $(2, 2)$  and  $(2, 12)$  are the endpoints of a diameter of a circle. What is the length of the radius of the circle?

A. 5

B. 7

C. 6

D. 10

10. \_\_\_\_\_ What is the least common denominator of  $\frac{1}{2}$ ,  $\frac{2}{7x}$ , and  $\frac{5}{x}$ ?

A.  $9x$

B.  $14x$

C.  $2x$

D.  $14x^2$

11. \_\_\_\_\_ If  $3x$  is one factor of  $3x^2 - 9x$ , what is the other factor?

A.  $3x$

B.  $x - 3$

C.  $x^2 - 6x$

D.  $x + 3$

12. \_\_\_\_\_ If the temperature in Buffalo is  $23^\circ$  Fahrenheit, what is the temperature in degrees Celsius? Use the formula  $C = \frac{5}{9}(F - 32)$ .

13. \_\_\_\_\_ If  $f(x) = 4x^0 + (4x)^{-1}$ , what is the value of  $f(4)$ ?

A. -12      B. 0  
C.  $1\frac{1}{16}$       D.  $4\frac{1}{16}$

14. \_\_\_\_\_ Which expression represents the number of yards in  $x$  feet?

A.  $\frac{x}{12}$       B.  $3x$   
C.  $\frac{x}{3}$       D.  $12x$

15. \_\_\_\_\_ Tara buys two items that cost  $d$  dollars each. She gives the cashier \$20. Which expression represents the change she should receive?

A.  $20 - 2d$       B.  $20 + 2d$   
C.  $20 - d$       D.  $2d - 20$

16. \_\_\_\_\_ A pizza restaurant charges for pizzas and adds a delivery fee. The cost ( $c$ ), in dollars to have any number of pizzas ( $p$ ) delivered to a home is described by the function  $c = 8p + 3$ . Which statement is true?

A. The cost of 8 pizzas is \$11.      B. The cost of 3 pizzas is \$14.  
C. Each pizza costs \$8 and the delivery fee is \$3.      D. Each pizza costs \$3 and the delivery fee is \$8.

17. \_\_\_\_\_ The points scored by a football team are shown in the steam-and-leaf plot below.

## Football Team Points

0	6
1	2 3 4 7
2	0 3 4 4 7 8 8 8
3	0 7 8

Key

What was the median number of points scored by the football team?

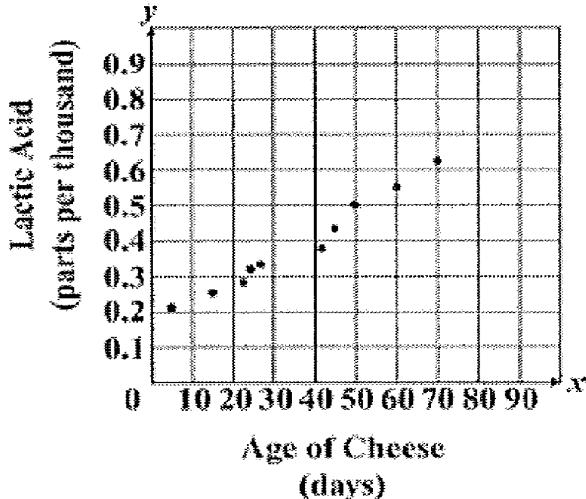
A. 24

B. 27

C. 28

D. 32

18. \_\_\_\_\_ The scatterplot below shows data from an experiment that tested the amount of lactic acid present in aging cheese.



Which best describes the relationship between the age of the cheese and the amount of lactic acid present in the cheese, as shown in the scatter plot?

A. There is no correlation.

B. There is a positive correlation.

C. There is a negative correlation.

D. There is a non-linear correlation.

19. \_\_\_\_\_ There are exactly 9 buttons in a bag. There are 4 blue buttons and 3 red buttons, and the rest are yellow. If one button is drawn at random from the bag, what is the probability that the button is yellow?

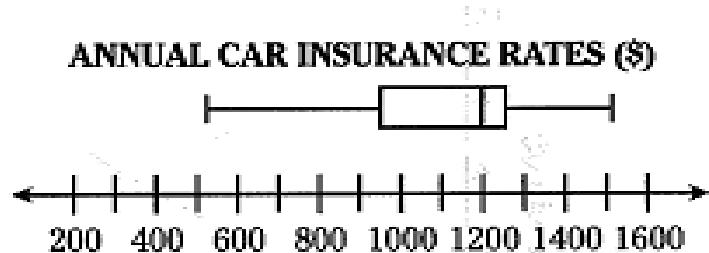
A.  $1/9$

B.  $1/7$

C.  $2/9$

D.  $2/7$

20. \_\_\_\_\_ Daisy gather information on annual car insurance rates in her area. These data are shown in the box-and-whisker plot below.



What amount is closest to the interquartile range of these rates?

A. \$300

B. \$525

C. \$675

D. \$950