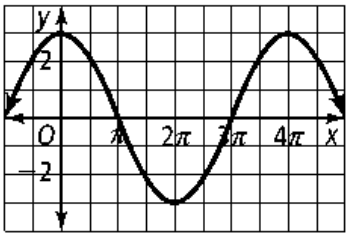
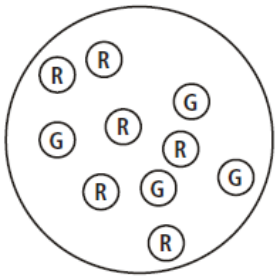
1	Find a positive and a negative coterminal angle for an angle that measures 930°.
2	What is the period and amplitude of this graph? How many cycles occur between 0 and 2 π? 
3	A central angle of a circle that measures $\frac{\pi}{3}$ radians intercepts an arc that is 12 cm. What is the radius of the circle?
4	Simplify $\frac{x-5}{25-x^2}$.

5

A bag contains six red balls and four green balls. Two balls are chosen at random. Is it more likely that both balls will be red if the first ball is replaced before the second ball is chosen?



A Yes, because the probability of the independent events is greater than the probability of the dependent events.

B Yes, because the probability of the dependent events will be greater than the probability of the independent events.

C No, because the probability of choosing two red balls remains the same.

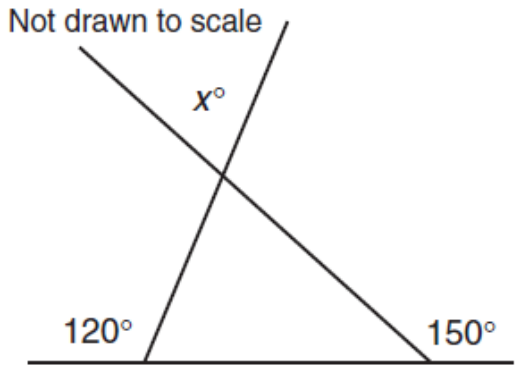
D No, because after selecting the first ball, there will still be more red balls than green balls.

6

Find the circumference of a circle with an area of 25π.

Express your answer in terms of π

7



What is the value of x in the above figure?

(A) 60°

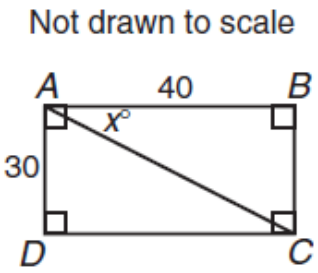
(B) 7°

(C) 90°

(D) 120°

(E) 150°

8



In the above figure, $\sin x =$?

(A) $\frac{3}{5}$

(B) $\frac{3}{4}$

(C) $\frac{5}{4}$

(D) $\frac{4}{3}$

(E) $\frac{5}{3}$

9

In right triangle ABC, $\sin A = \frac{5}{13}$. What is $\cos B$?

(A) $\frac{5}{13}$

(B) $\frac{5}{12}$

(C) $\frac{12}{13}$

(D) $\frac{12}{5}$

(E) $\frac{13}{5}$

10

$f(x) = 2x - 3$
$g(x) = -4x - 1$
$h(x) = 2x^2 + x - 5$

Which of the following composite of functions has the value of -5?

(A) $g(h(1)$

(B) $g(f(2))$

(C) $f(g(1))$

(D) $f(h(0))$

(E) $h(f(-5))$

11

$f(x) = 2x - 3$
$h(x) = 2x^2 + x - 5$

Which is the function rule for $h(t) + f(t)$?

(A) $2t^2 + 3t - 8$

(B) $4t^2 + t - 8$

(C) $-2t^2 + 3t - 2$

(D) $2t^2 + t - 8$

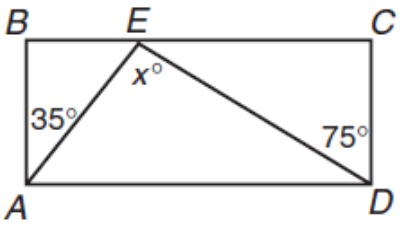
(E) $-4t - 1$

12. Simplify the following expression.

$$\frac{x^2 - 8x}{x - 8} \cdot \frac{x + 2}{x}$$

13.

Not drawn to scale



ABCD is a rectangle. What is the value of x?

14. A data set has a normal distribution with a mean of 32 and a standard deviation of 3. Which percent of the data has a value less than 29?

F 50% G 16% H 13.5% I 2.5%

15. What is the period of the graph of $y = \sin \pi x$?

A 2 B π C $\frac{\pi}{2}$ D 2π

16. A and B are two independent events. $P(A) = \frac{1}{5}$ and $P(B) = \frac{3}{10}$. What is $P(A \text{ and } B)$?

F $\frac{1}{10}$ G $\frac{1}{2}$ H $\frac{3}{50}$ I $\frac{4}{15}$

17. Which is the solution to $\sqrt{3x - 5} + 4 = 0$?

18. The graph of $y = \frac{2}{x}$ is to be translated three units to the right and four units downward. What is the new equation?

F $y = \frac{2}{x - 3} + 4$ G $y = \frac{2}{x - 3} - 4$ H $y = \frac{2}{x + 3} + 4$ I $y = \frac{2}{x + 3} - 4$

19	3. Simplify $\frac{\sqrt{2}}{2-\sqrt{2}}$. F $1+2\sqrt{2}$ G $1-\sqrt{2}$ H $1+\sqrt{2}$ I $2-\sqrt{2}$
20	Which is the equation of the horizontal asymptote for the rational function $f(x)=\frac{3x^2}{x^2-3x-4}$? F $x=4$ G $x=3$ H $y=3$ I $y=4$
21	Solve $\sqrt{x+8}-6=x$. Explain how to check for extraneous solutions. Does this equation have an extraneous solution? Show your work.
22	Which expression is equivalent to $\frac{\sqrt[3]{x^2}}{\sqrt[6]{x^2}}$? A $\sqrt[2]{x}$ B $\sqrt[2]{x^{-3}}$ C $\sqrt[3]{x}$ D $\sqrt[3]{x^2}$
23	The electric current I in amperes (A) of a circuit is given by the formula $\log_2 I=-t$. Find the current when t is 3 s. F -0.903 A G 0.125 A H 0.405 A I 0.794 A
24	4. Which of the following is the correct expansion of $\log_6 \frac{x^2y}{z^4}$? F $\log_6 2x+\log_6 y-\log_6 4z$ G $2\log_6 x\cdot\log_6 y\div 4\log_6 z$ H $2\log_6 x+\log_6 y-4\log_6 z$ I $2\log_6 xy+4\log_6 z$
25	5. For the years 2000–2005, the median price of a single-family home in the United States can be approximated by the exponential function $A=227{,}200(1.087)^t$, where t is the number of years after the year 2000. a. What is the growth rate of housing prices for this period? b. What was the median price of a single-family home in the year 2005?