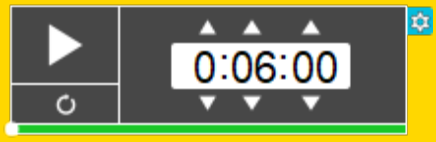
Welcome!
More college prep stuff!

Use the following information: $f(x) = -3x + 2$ and $g(x) = 4x - 1$

1) Find $g(x) - f(x)$

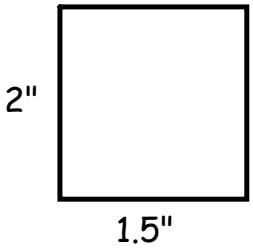


2) Find $f(x) \cdot g(x)$

3) Find $f(4) + g(-2)$

4) Find $f(g(x))$

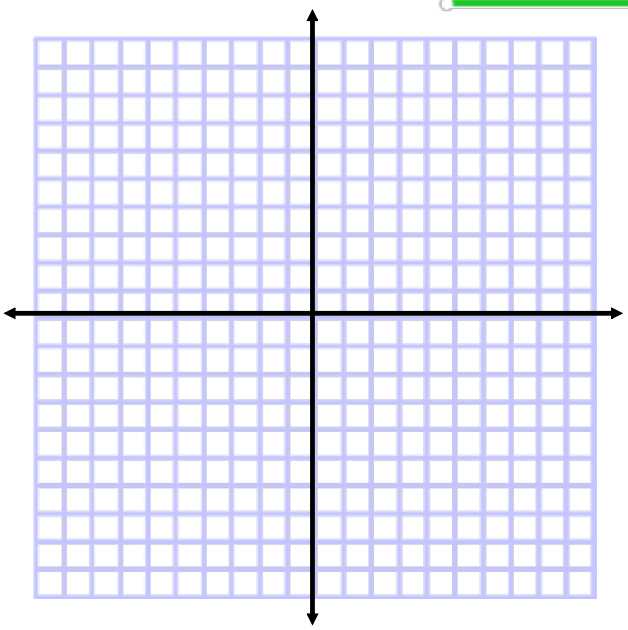
5) Find $f(g(5))$



1. If the picture shown above is enlarged proportionally so that the height is now 6 inches, how large of a border would you need so that it would go all the way around the enlarged picture?
(A) 13 inches
(B) 15 inches
(C) 17 inches
(D) 19 inches
(E) 21 inches

2. If a circle with radius 5 has its center at the point (−1, 3), which of the following points is on the circle?

(A) (−6, −2)
(B) (−1, −2)
(C) (−4, 8)
(D) (6, 3)
(E) (4, 8)

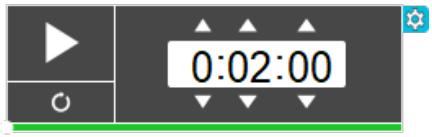


3. The graph of which of the following equations would be perpendicular to the graph of $y = -3x + 8$?

(A) $12x + 36y = 1$
(B) $3x - y = 8$
(C) $3x - 8y = 1$
(D) $3x + y = 8$
(E) $4x - 12y = 7$

4. If $\frac{7.2}{x} = \frac{4}{5}$, THEN $\frac{x}{4} = ?$

(A) 0.25
(B) 1.25
(C) 2.25
(D) 3
(E) 9

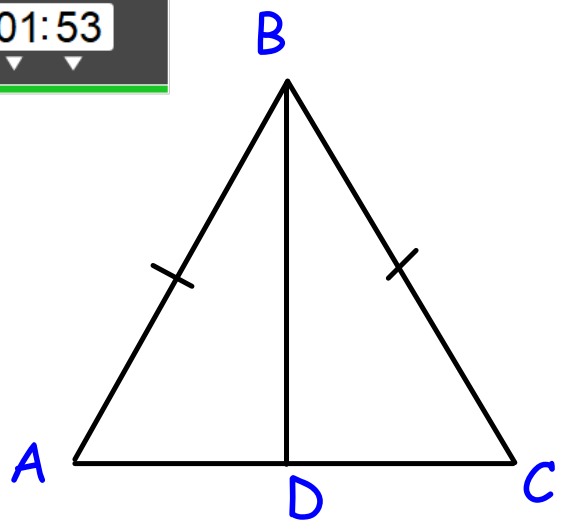


5. If Jane goes to the market, she cannot take Pete to baseball practice. If Pete goes to practice, he can play in the game tomorrow. If Pete does not play in tomorrow's game, then which of the following MUST be true?
(A) Jane went to the market.
(B) Jane did not go to the market.
(C) Pete went to practice.
(D) Pete did not go to practice.
(E) None of the above.

6. $3x + 2y = 10$
$2x + y = 7$

Use the system given above to find the sum of x and y.

(A) 3
(B) 4
(C) 5
(D) 6
(E) 7

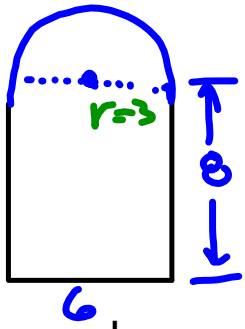


7. If Triangle ABC is isosceles and m<BDC is 90, then which of the following statements is false?

(A) BD = AC
(B) AD = DC
(C) AB = BC
(D) m<A = m<C
(E) m<ABD = m<CBD

10. Which of the following statements is ALWAYS true for a set of data?

(A) The mode is greater than the range.
(B) The median is greater than the mean.
(C) The mean cannot equal the median.
(D) The mode always has the greatest value.
(E) None of the above.



$C = \pi d$

$C = 2\pi r$

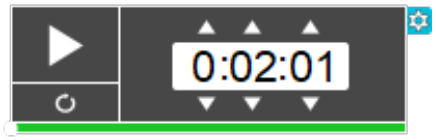
$A = \pi r^2$

$A_{\square} = lw$

$P = 2l + 2w$

11. The shape above was made by connecting a semicircle to a rectangle. What is the perimeter of the shape?

(A) 3π + 22
(B) 6π + 14
(C) 6π + 22
(D) 12π + 22
(E) 25π



FIND THE AREA

A) $36\pi + 48$

B) $9\pi + 48$

C) 54π

D) $\frac{9}{2}\pi + 48$

E) NONE

12. If m and n are roots of the equation $x^2 - 9x + 20 = 0$, what is the value of $m^2 + n^2$?

(A) 9
(B) 12
(C) 41
(D) 81
(E) 104

13. Shawna is at the state fair. She currently has enough money to ride the Berserker 20 times. If the cost to ride the Berserker was 25 cents less, Shawna could ride it 10 more times. How much money does Shawna have?
(A) $10.00
(B) $15.00
(C) $17.00
(D) $20.00
(E) $23.00

14. If $x + y = 1.2$, then $x^2 + 2xy + y^2 =$

(A) 1.44
(B) 2.4
(C) 3.84
(D) 3.6
(E) Cannot be determined from the information given

17. A hat has 20 cards in it. On each card is written the name of one of three people. Mike has twice as many cards with his name than Jane and Jane has 4 more cards than Eric. If a card is pulled out of the hat at random, what is the probability that it has Eric's name on it?

(A) 1/ 20
(B) 1/10
(C) 1/ 6
(D) 1/ 3
(E) 1/ 2

18. A soup can is made up of a side, a top, and a bottom. If the diameter and height of the can are equal and the volume is 128π units^3, what is the total surface area of the can in square units?

(A) 84π
(B) 96π
(C) 128π
(D) 140π
(E) 152π

19. The length of a rectangle is twice the width. If the area of the rectangle is 32 square units, what is the perimeter of the rectangle?
(A) 4
(B) 8
(C) 16
(D) 24
(E) 32