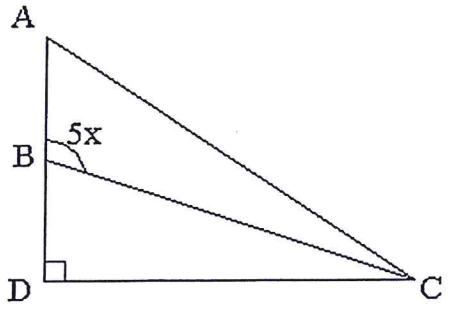
Bellwork Hon Alg 2 Wednesday, November 16, 2016



1. Which of the following could be a value of x, in the diagram above?
A. 10
B. 20
C. 40
D. 50
E. any of the above

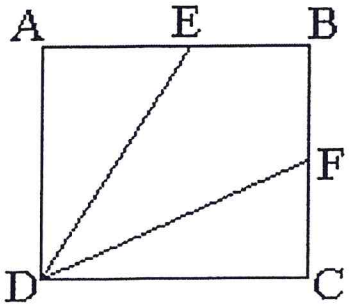
3. Jo's collection contains US, Indian and British stamps. If the ratio of US to Indian stamps is 5 to 2 and the ratio of Indian to British stamps is 5 to 1, what is the ratio of US to British stamps?
A. 5 : 1
B. 10 : 5
C. 15 : 2
D. 20 : 2
E. 25 : 2

4. A 3 by 4 rectangle is inscribed in circle. What is the circumference of the circle?
A. 2.5π
B. 3π
C. 5π
D. 4π
E. 10π

5. Two sets of 4 consecutive positive integers have exactly one integer in common. The sum of the integers in the set with greater numbers is how much greater than the sum of the integers in the other set?
A. 4
B. 7
C. 8
D. 12
E. it cannot be determined from the information given.

6. If $f(x) = (x + 2) / (x-2)$ for all integers except $x=2$, which of the following has the greatest value?
A. f(-1)
B. f(0)
C. f(1)
D. f(3)
E. f(4)

Yes, there are problems on the back too!



7. ABCD is a square of side 3, and E and F are the mid points of sides AB and BC respectively. What is the area of the quadrilateral EBFD ?

A. 2.25
B. 3
C. 4
D. 4.5
E. 6

8. If $n \neq 0$, which of the following must be greater than n?

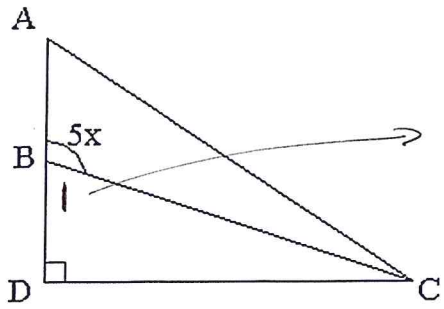
I $2n$
II n^2
III $2 - n$

A. I only
B. II only
C. I and II only
D. II and III only
E. None

9. After being dropped a certain ball always bounces back to 2/5 of the height of its previous bounce. After the first bounce it reaches a height of 125 inches. How high (in inches) will it reach after its fourth bounce?

A. 20
B. 15
C. 8
D. 5
E. 3.2

Bellwork Hon Alg 2 Wednesday, November 16, 2016 Answers



∠1 must be less than 90° therefore 5x must be greater than 90° but less than 180

$\frac{90}{5} < \frac{5x}{5} < \frac{180}{5}$

$18 < x < 36$

1. Which of the following could be a value of x, in the diagram above?

A. 10
B. 20
C. 40
D. 50
E. any of the above

3. Jo's collection contains US, Indian and British stamps. If the ratio of US to Indian stamps is 5 to 2 and the ratio of Indian to British stamps is 5 to 1, what is the ratio of US to British stamps?

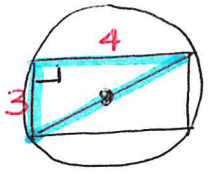
A. 5 : 1
B. 10 : 5
C. 15 : 2
D. 20 : 2
E. 25 : 2

$\frac{US}{I} = \frac{5}{2}$ $\quad B \cdot \frac{I}{B} = \frac{5}{1} \cdot B \rightarrow I = 5B$

$5 \cdot \frac{US}{5B} = \frac{5}{2} \cdot 5$ $\quad \frac{US}{B} = \frac{25}{2}$

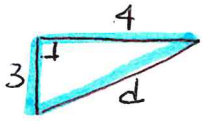
4. A 3 by 4 rectangle is inscribed in circle. What is the circumference of the circle?

A. 2.5π
B. 3π
C. 5π
D. 4π
E. 10π



diameter of the circle = 5

circumf = πd
$= \pi \cdot 5$



$d^2 = 3^2 + 4^2$
$d^2 = 9 + 16$
$d^2 = 25$
$d = 5$

5. Two sets of 4 consecutive positive integers have exactly one integer in common. The sum of the integers in the set with greater numbers is how much greater than the sum of the integers in the other set?

A. 4
B. 7
C. 8
D. 12
E. it cannot be determined from the information given.

$x-3 \quad x-2 \quad x-1 \quad x \quad x+1 \quad x+2 \quad x+3$

sum = $4x-6$ sum = $4x+6$

$(4x+6) - (4x-6) = 12$

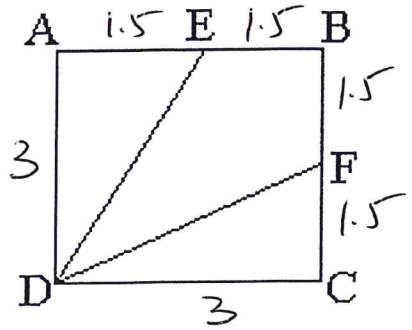
6. If f(x) = (x + 2) / (x-2) for all integers except x=2, which of the following has the greatest value?

A. f(-1)
B. f(0)
C. f(1)
D. f(3)
E. f(4)

these 3 will result in a negative value

$f(3) = \frac{5}{1} = 5$

$f(4) = \frac{6}{2} = 3$



Area EBFD = Area of SQ − ΔDAE − ΔDCF

$= (3)^2 - \frac{1}{2}(3)(1.5) - \frac{1}{2}(3)(1.5)$

$= 9 - 2.25 - 2.25$

$= 4.5$

7. ABCD is a square of side 3, and E and F are the mid points of sides AB and BC respectively. What is the area of the quadrilateral EBFD ?

A. 2.25
B. 3
C. 4
D. 4.5
E. 6

8. If $n \neq 0$, which of the following must be greater than n?

I $2n$ ✗ → 2n could be less than n if n is neg
II n^2 ✗ → n2 could be less than n if $0 < n < 1$
III $2 - n$ → 2−n could be less than n if $n > 1$

A. I only
B. II only
C. I and II only
D. II and III only
E. None

9. After being dropped a certain ball always bounces back to 2/5 of the height of its previous bounce. After the first bounce it reaches a height of 125 inches. How high (in inches) will it reach after its fourth bounce?

A. 20
B. 15
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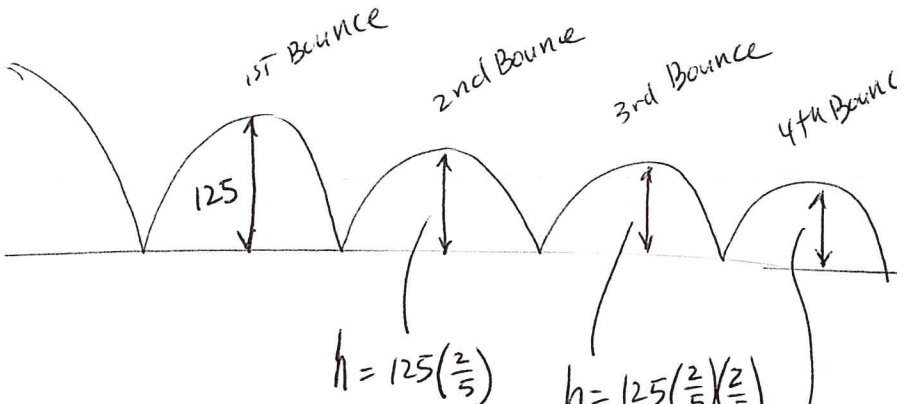
E. 3.2



$h = 125\left(\frac{2}{5}\right)$

$h = 125\left(\frac{2}{5}\right)\left(\frac{2}{5}\right)$

$h = 125\left(\frac{2}{5}\right)\left(\frac{2}{5}\right)\left(\frac{2}{5}\right)$

$= 8$