1) If $x^2=k$ where x and k are integers, which of the following could be the value of k?

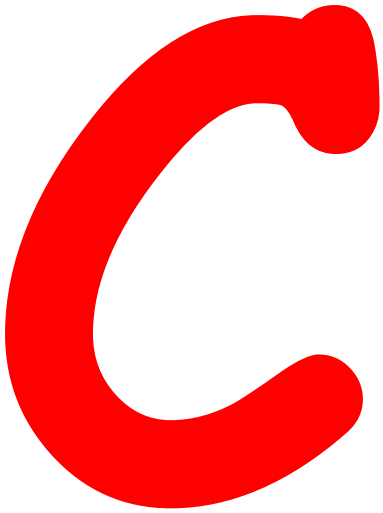
A) 3

B) 6

C) 9

D) 12

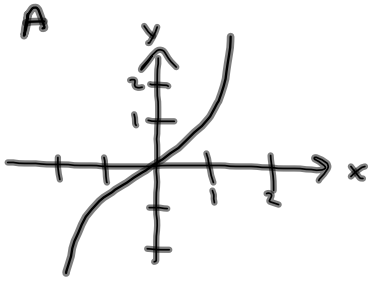
E) 15



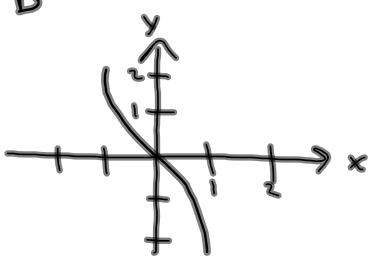
Jul 27-10:06 AM

2) For which of the following graphs is f(x)=f(-x) for all values of x shown?

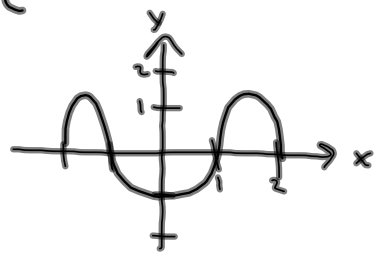
A



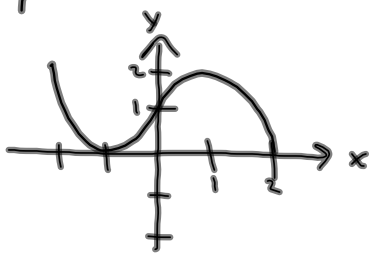
B



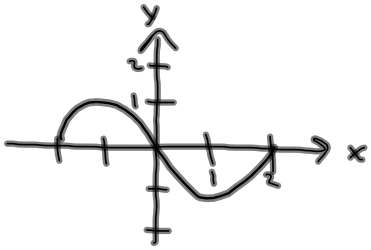
C

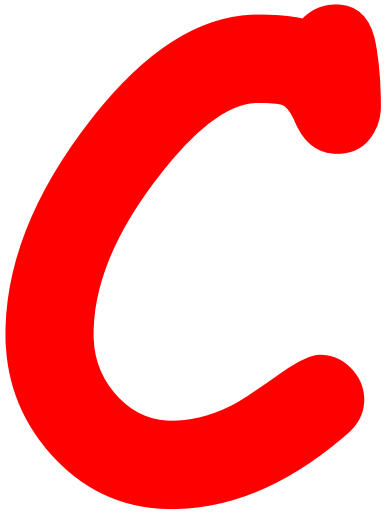


4



E





Jul 27-10:15 AM

3) A class has twice as many boys as girls. The students in the class stand in one line, with a girl at the front of the line. Which of the following must be true?

A) the last person in line is a girl.

B) the last person in line is a boy.

C) there are more girls than boys in the class.

D) There are at least two girls standing next to each other.

E) There are at least two boys standing next to each other.

3) A class has twice as many boys as girls. The students in the class stand in one line, with a girl at the front of the line. Which of the following must be true?
A) the last person in line is a girl. X
B) the last person in line is a boy. X
C) there are more girls than boys in the class. X
D) There are at least two girls standing next to each other.
E) There are at least two boys standing next to each other.

D) GBBGBB X

E) GBGBGBBBB

GBB

4) Which of the following is the equation of a line that has an y-intercept of 2 and an x-intercept of 3?

A) -2x+3y=4

B) -2x+3y=6

C) 3x+3y=4

D) 2x+3y=6

E) 3x+2y=6

4) Which of the following is the equation of a line that has an y-intercept of 2 and an x-intercept of 3?

A) $-2x+3y=4$ $x=0 \Rightarrow y=\frac{4}{3}$ ✗

B) $-2x+3y=6$ $y=0 \Rightarrow x$ neg ✗

C) $3x+3y=4$ $x=0 \Rightarrow x=\frac{4}{3}$ ✗

D) $2x+3y=6$ $y=0 \Rightarrow x=3$ ✓ $x=0 \Rightarrow y=2$ ✓

E) $3x+2y=6$ ✗

5) In a game, each of 5 players scored between 0 and 100, inclusive. If their average score was 80, what is the greatest possilbe number of players who could have scored 50?

A) None
B) One
C) Two
D) Three
E) Four

5) In a game, each of 5 players scored between 0 and 100, inclusive. If their average score was 80, what is the greatest possilbe number of players who could have scored 50?

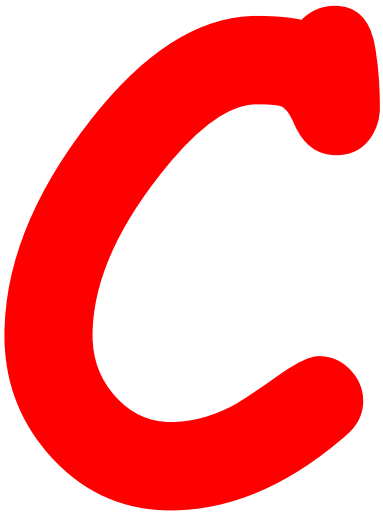
A) None X
B) One X
C) Two
D) Three X
E) Four X

$\text{Sum} = 5(80)$
$= 400$

$\frac{50 + 110}{2} = 80$

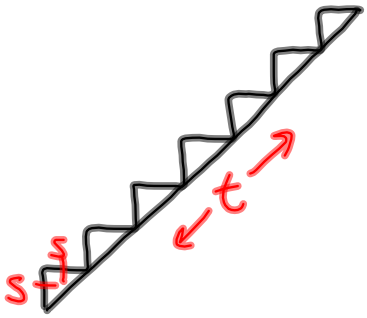
$\frac{50+50+220}{4} = 80$

$50+50+100+100+100$

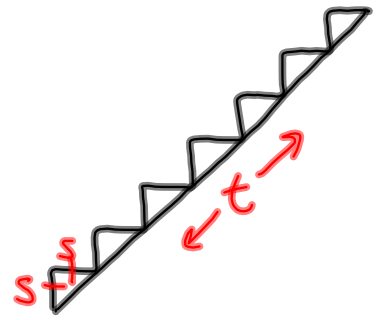


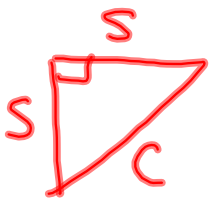
Jul 27-10:34 AM

6) If each step makes a right angle, what is the value of **t** in terms of **s**?



6) If each step makes a right angle, what is the value of **t** in terms of **s**?





$c^2 = s^2 + s^2$

$c^2 = 2s^2$

$c = \sqrt{2}(s)$

$t = 7s\sqrt{2}$

7) The sum of 4 consecutive odd integers, w,x,y, and z, is 24. What is the median of the set {w,x,y,z,24}?

A) 3

B) 5

C) 7

D) 9

E) 24

7) The sum of 4 consecutive odd integers, w,x,y, and z, is 24. What is the median of the set {w,x,y,z,24}?

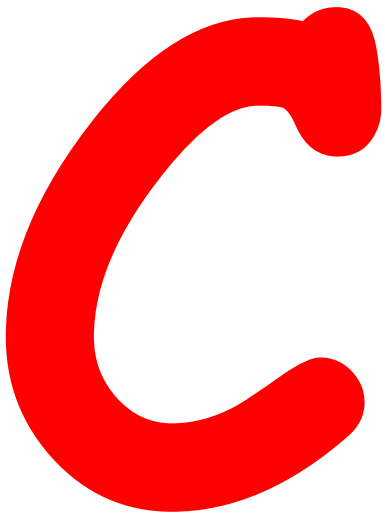
A) 3
B) 5
C) 7
D) 9
E) 24

$(x)+(x+2)+(x+4)+(x+6)=24$

$4x+12=24$

$4x=12$

$x=3$



Jul 27-10:46 AM

8)

x	f(x)	g(x)
0	5	2
1	0	4
2	2	3
3	4	1
4	1	5
5	3	0

If k=f(3), what is the value of g(k)?

8)

x	f(x)	g(x)
0	5	2
1	0	4
2	2	3
3	4	1
4	1	5
5	3	0

If k=f(3), what is the value of g(k)?

$f(3)=4$

$k=4$

$g(k)=g(4)=5$

$f(x) = x^2$

$g(x) = 2x$

x	f(x)	g(x)
0		
1		
2		
3		
4		
5		

$f(x) = x^2$

$g(x) = 2x$

x	f(x)	g(x)
0	0	0
1	1	2
2	4	4
3	9	6
4	16	8
5	25	10

9) In a school there are **k** classes with **n** students in each class. If a total of **p** pencils are distributed equally among these students, how many pencils are there for each student?

A) p/(kn)
B) (kn)/p
C) (kp)/n
D) (np)/k
E) npk

9) In a school there are **k** classes with **n** students in each class. If a total of **p** pencils are distributed equally among these students, how many pencils are there for each student?

A) p/(kn)
B) (kn)/p
C) (kp)/n
D) (np)/k
E) npk

$$\frac{\text{Pencils}}{\text{student}} = \frac{p}{k \cdot n}$$

10) if $x + \frac{1}{x} = 2$

what is the value of $x^2 + \frac{1}{x^2}$?

10) if $x + \frac{1}{x} = 2$

what is the value of $x^2 + \frac{1}{x^2}$?

$x\left(x + \frac{1}{x} = 2\right)$

$x^2 + 1 = 2x$

$x^2 - 2x + 1 = 0$

$(x-1)(x-1) = 0$

$x = +1$

$(1)^2 + \frac{1}{1^2} = 2$

$$\left[x+\frac{1}{x}=2\right]^2$$

$$\left(x+\frac{1}{x}\right)\left(x+\frac{1}{x}\right)=4$$

$$x\cdot x+\frac{1}{x}x+x\frac{1}{x}+\frac{1}{x}\frac{1}{x}$$

$$x^2+1+1+\frac{1}{x^2}$$

$$x^2+2+\frac{1}{x^2}=4$$

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

11) if 1/4 of 4/3 is subtracted from 2 what is the result?

11) if 1/4 of 4/3 is subtracted from 2 what is the result?

$2 - \frac{1}{4} \cdot \frac{4}{3}$

$2 - \frac{1}{3}$

$\frac{6}{3} - \frac{1}{3}$

$\frac{5}{3}$, $1\frac{2}{3}$, $1.\overline{66}$, 1.67

12) The slope of a line passing through the points (a,0) and (1,-2) is 1/2. What is the value of a?

12) The slope of a line passing through the points (a,0) and (1,-2) is 1/2. What is the value of a?

$$m = \frac{\text{rise}}{\text{run}} = \frac{\Delta y}{\Delta x} = \frac{-2-0}{1-a} = \frac{1}{2}$$

$$\frac{-2}{1-a} = \frac{1}{2}$$

$$(1-a)(1) = (-2)(2)$$

$$1-a = -4$$

$$-a = -5$$

$$a = 5$$

$(5,0)$ $(1,-2)$

$$m = \frac{0-(-2)}{5-1}$$

$$= \frac{2}{4} = \frac{1}{2}$$

13) One adult and 10 children are in an elevator. The adult's weight is 4 times the average weight of the children. The adult's weight is what fraction of the total weight of the 11 people?

13) One adult and 10 children are in an elevator. The adult's weight is 4 times the average weight of the children. The adult's weight is what fraction of the total weight of the 11 people?

C = child avg weight
A = adult weight

$A = 4C$

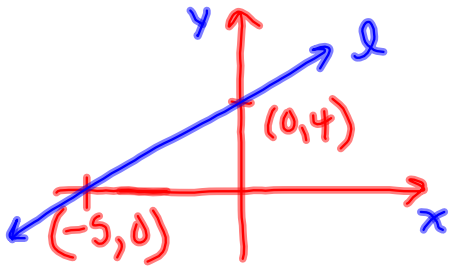
$10C + A =$ total weight

$14C =$ t.w.

$\frac{A}{T.W.}$?

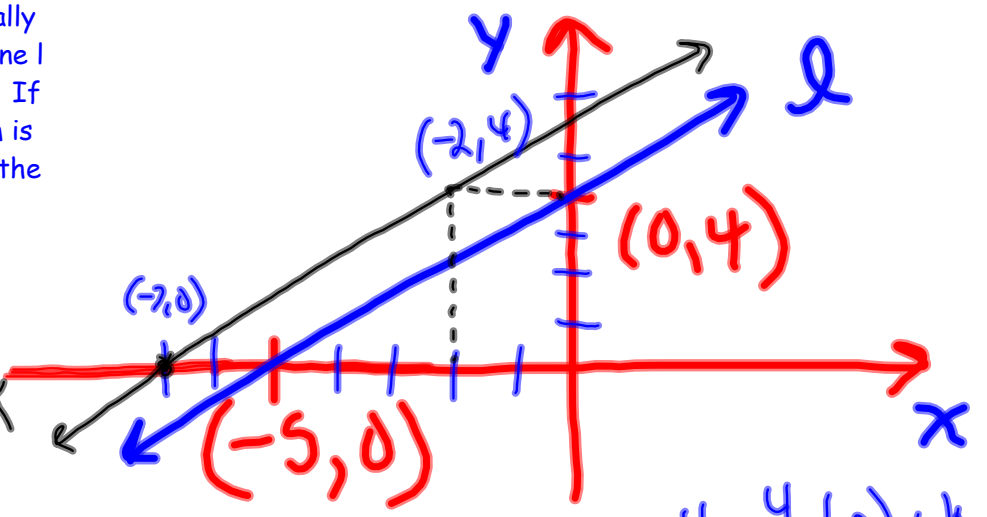
$\frac{4C}{14C} = \frac{2}{7}$

14) line **m** (not shown) is obtained by horizontally translating (sliding) line **l** two units to the left. If the equation of line **m** is **y=(4/5)x + k**, what is the value of **k**?



Jul 27-2:20 PM

14) line m (not shown) is obtained by horizontally translating (sliding) line l two units to the left. If the equation of line m is y=(4/5)x + k, what is the value of k?



$y = \frac{4}{5}x + k$

$0 = \frac{4}{5}(-7) + k$

$0 = -\frac{28}{5} + k$

$k = \frac{28}{5} = 5.6$

$4 = \frac{4}{5}(-2) + k$

$4 = -\frac{8}{5} + k$

$\frac{28}{5} = k$