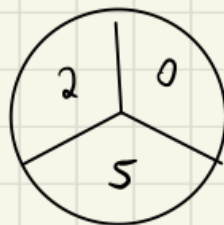


8)



16. 8 isn't a possible sum

39)

D) A

75% of difference between 200 and A

Which operation to do first?

Subtract first

1) Read carefully

E Subtract first then multipl

Show 47)  
example of  
recursion

$$a_1 = 10$$

$$a_2 = 15$$

$$a_2 = a_{n-1} + 5$$

$$a_2 = a_1 + 5$$

(1) Recursive vs explicit formulas

To get 2<sup>nd</sup> term,  
add 1 to first  
term

Recursive

$$a_{1000}$$

Need to recurse 999 times

$$a_{1000} = a_{999} + 5$$

$$a_{999} = a_{998} + 5 \dots 999 \text{ times}$$

Explicit

$$a_{1000} = 5(1000) + 5$$

47) Slope is 5  $\rightarrow$  only B or C, with  $S_n$  term because recursive formula says to add 5 each term

$$S_n + 10$$

Let  $n=1$ , you get 15

But we know  $a_1 = 10$ , so that's wrong

$$\text{Has to be } a_n = S_n + 5$$

27) exponential growth/decay

initial  
value, at  
 $t=0$

$$N \left( \frac{1}{2} \right)^{t/8}$$

amount of  
time elapsed

$$32 \left( \frac{1}{2} \right)^{16/8}$$

$$32 \cdot \left( \frac{1}{2} \right)^2 = 32 \div 2 \div 2$$

Half life - amount of time for substance's mass to reduce by half

How many half-lives have elapsed?

2

$$a_1 = N$$

$$a_n = a_{n-1} \cdot r$$

If  $r > 1$ , growth  
 $r < 1$ , decay

(1)

10)



$$C = 2\pi r = 20\pi$$

$$P_{\text{hexagon}} < 20\pi$$

all equilateral triangles  
because it's regular

Pay attention to important words like "regular"

Attempt fairly safe assumptions

51)

$$3a + c = 30$$

$$100a + 125b + 200c = 5100$$

$$100a + 125(2a) + 200c = 5100$$

$$\text{max \# vars} = \text{\# equations}$$

Linear  
algebra  
deals with  
this

35)

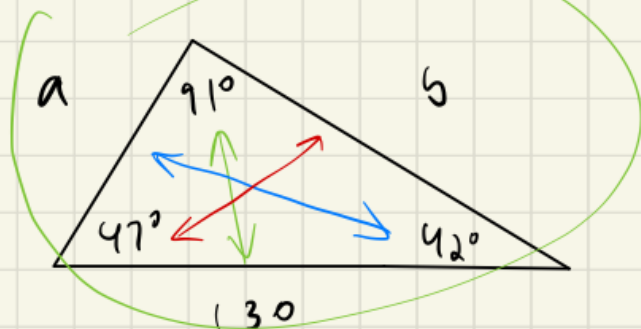
Any time you have 2 points, automatically have:  
slope  
y-intercept

53)

Want: Perimeter  $\div$  4  
Perimeter

Law of  
Sines

Use law of sines  
when the triangle  
doesn't have a  
right angle



$$\frac{a}{\sin A} = \frac{b}{\sin B} = \frac{c}{\sin C}$$

$$\frac{130}{\sin 91^\circ} = \frac{a}{\sin(42^\circ)} = \frac{b}{\sin(47^\circ)}$$

$$53) \frac{130}{\sin 91^\circ} = \frac{a}{\sin(42^\circ)} = \frac{b}{\sin(47^\circ)}$$

$$a = \frac{130 \sin(42^\circ)}{\sin(91^\circ)}$$

$$b = \frac{130 \sin(47^\circ)}{\sin(91^\circ)}$$

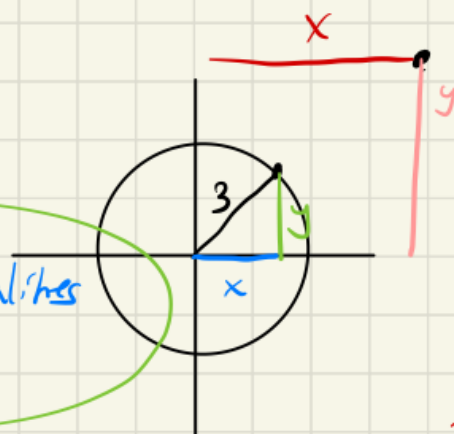
Answer A)

$$55) y \leq x - 3$$

$$x^2 + y^2 \leq 9$$

(3)

Try typing these inequalities in Desmos

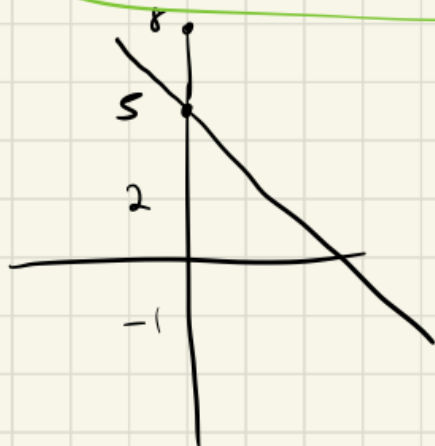


$$x^2 + y^2 = 9$$

$$x^2 + y^2 \geq 9$$

Don't graph unless you need to

Domain & range  
23)



$$\begin{aligned} 5 - 3(-1) &= 8 \\ 5 - 3(0) &= 5 \\ 5 - 3(2) &= -1 \end{aligned}$$

(C)

54)

21	22	23	24	25	26	27	28	29
$\wedge$	$\wedge$	$\wedge$	1	$\wedge$	1	$\wedge$		
3 7	2 · 11	2 <sup>3</sup> · 3	5 <sup>2</sup>	13 · 2	3 <sup>3</sup>	2 <sup>2</sup> · 7		

6) 2

Analogy: Atoms (primes)  
of a molecule (composite number)

Piecewise

56)

Read carefully

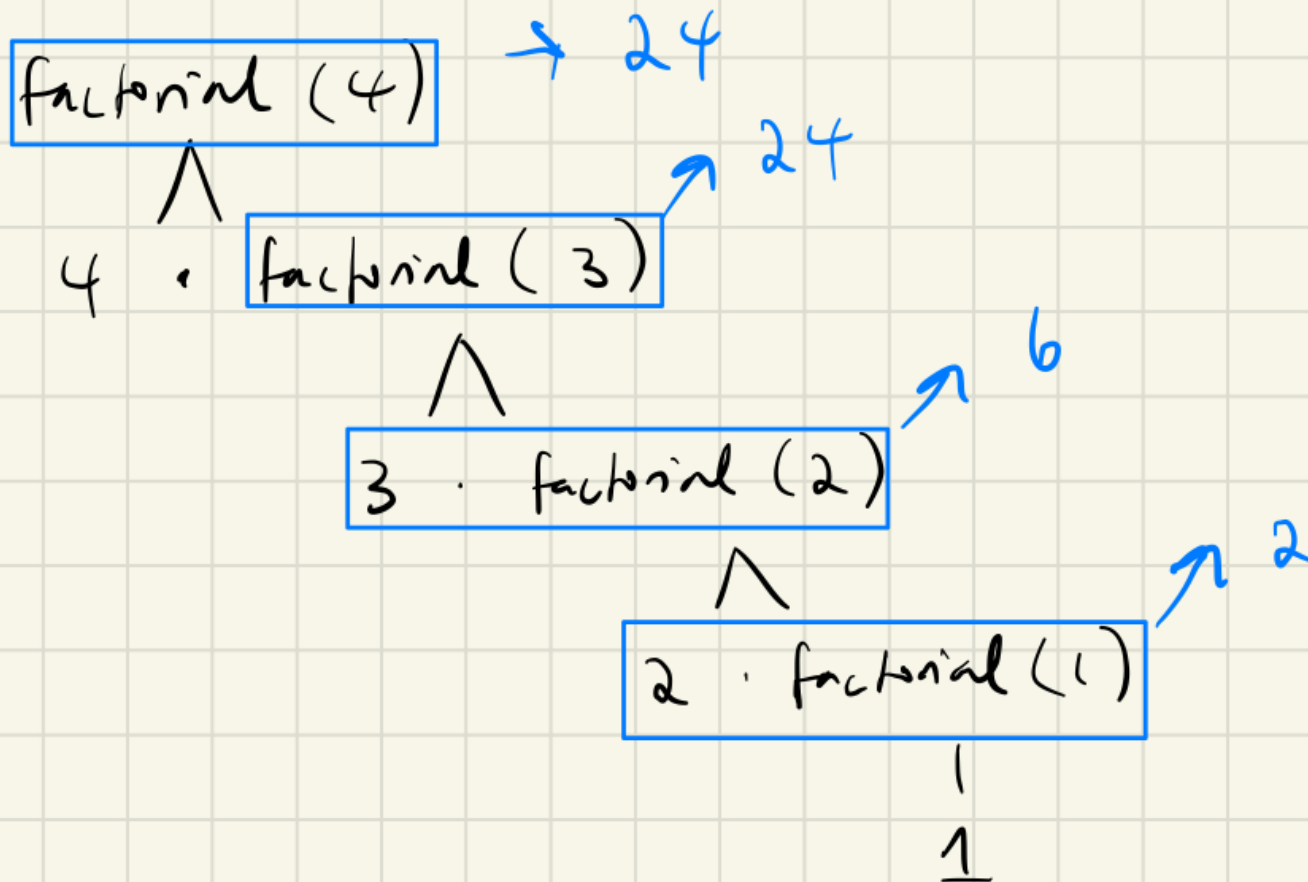
-1

1) 4

Code : recursion

Math : recursive formula

```
factorial(n)
  if n == 1 :
    return 1
  else :
    return n * factorial(n-1)
```



$$x_1 = 1$$
$$x_n = x_{n-1} \cdot n$$

$$x_1 = 1$$
$$x_2 = 2$$
$$x_3 = 6$$
$$x_4 = 24$$
$$x_5 = ?$$