[redacted]

1-23-22 Math 2019 June B02

8)

K. 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 multiply

Show 47) example of recursion

$a_1 = 10$
$a_2 = 15$

$a_n = a_{n-1} + 5$
$a_2 = a_1 + 5$

(1) Recursive vs explicit formula

To get 2nd term, add 1 to first term

Recursive

a_{1000}

Need to recurse 999 times

$a_{1000} = a_{999} + 5$
$a_{999} = a_{998} + 5$ ... 999 times

Explicit

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

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

$5n + 10$

Let $n = 1$, gm get 15

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

Has to be $a_n = 5n + 5$

27) exponential growth / decay

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

N: initial value, at $t = 0$

t: ammt of time elapsed

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

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

How many half-lives have elapsed? (1)

2

$a_1 = N$

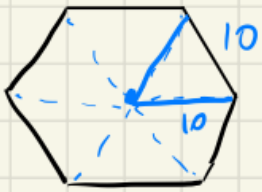
$a_n = a_{n-1} \cdot r$

If $r > 1$, growth

$r < 1$, decay

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

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)

Linear algebra deals with this

$3a + c = 30$

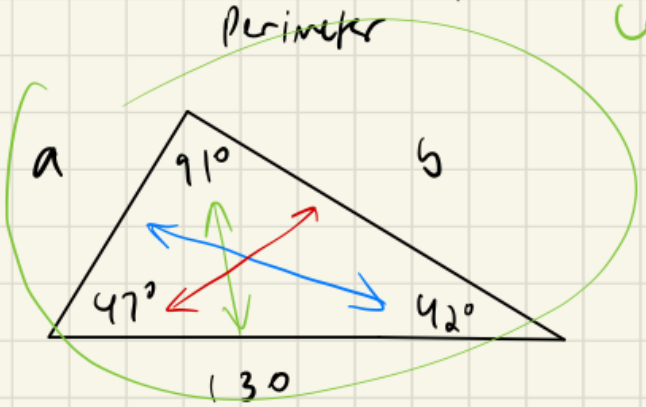
$100a + 125b + 200c = 5000$

$100a + 125(2a) + 200c = 5000$

max # cars = # equations

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

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

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

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

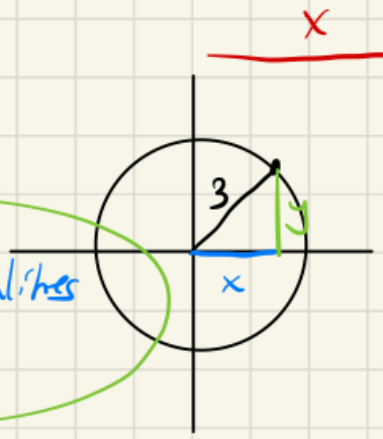
Answer A)

55) $y \leq x - 3$

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

(3)

Try typing these inequalities in Desmos



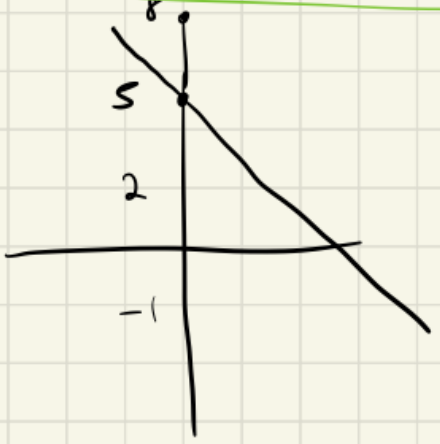
$x^2 + y^2 = 9$

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

Don't graph unless you need to

Domain & range

23)



$5 - 3(-1) = 8$

$5 - 3(0) = 5$

$5 - 3(2) = -1$

C

54) 21 22 23 24 25 26 27 28 29

$3 \cdot 7$ $2 \cdot 11$ $2^3 \cdot 3$ 5^2 $13 \cdot 2$ 3^3 $2^2 \cdot 7$

G) 2

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

Piecewise

56) Read carefully

-1 J) 4

Code : recursion

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

Math : recursive formula

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

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