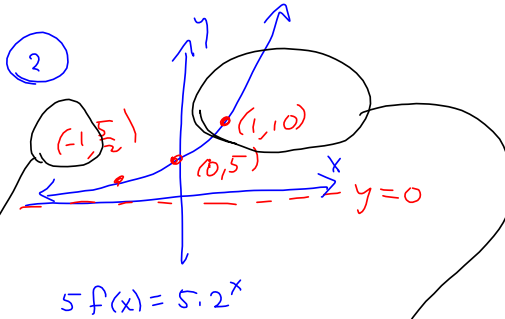
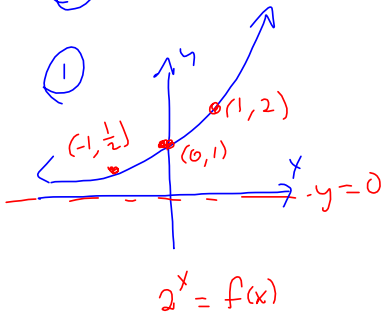


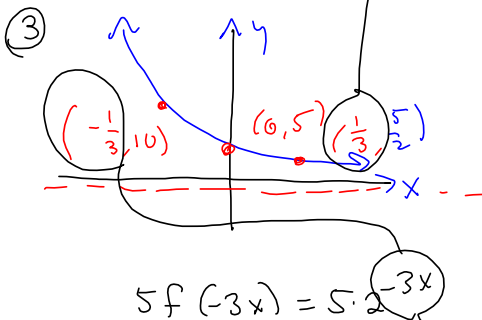
Graph $g(x) = 5 \cdot 2^{-3x+21} - 11$ $-3x+21 = -3(x-7)$

- ① 2^x ② $5 \cdot 2^x$ ③ $5 \cdot 2^{-3x}$ ④ $5 \cdot 2^{-3(x-7)}$

⑤ $5 \cdot 2^{-3(x-7)} - 11$



- ① 2^x ② $5 \cdot 2^x$ ③ $5 \cdot 2^{-3x}$ ④ $5 \cdot 2^{-3(x-7)}$



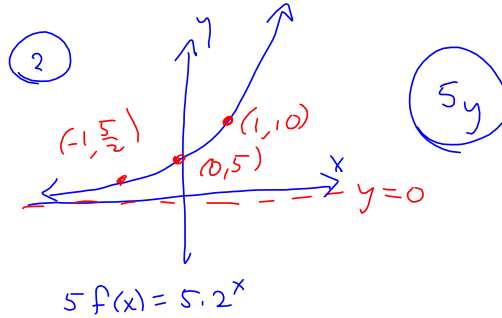
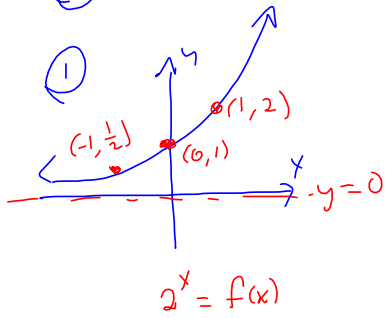
See? Divide
x's by the -3!

To go from
 $5 \cdot 2^x$ to $5 \cdot 2^{-3x}$

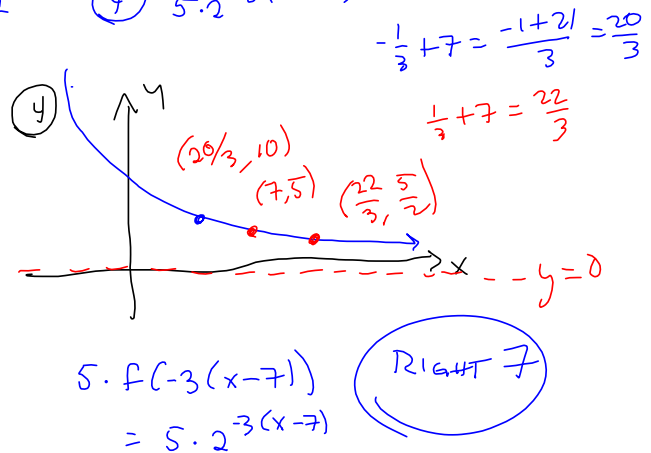
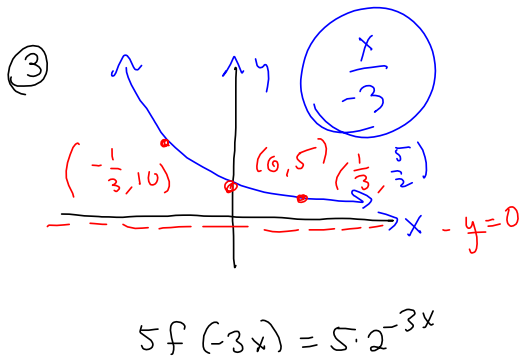
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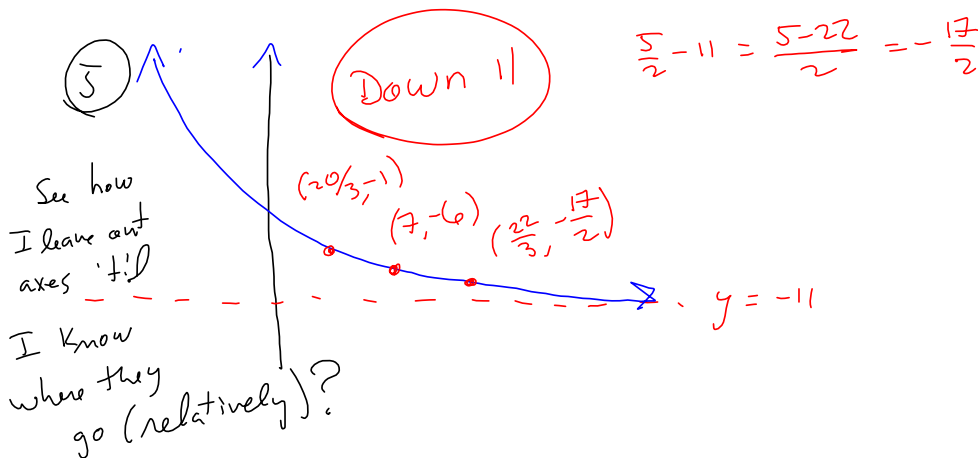
⑤ $5 \cdot 2^{-3(x-7)} - 11$



- ① 2^x ② $5 \cdot 2^x$ ③ $5 \cdot 2^{-3x}$ ④ $5 \cdot 2^{-3(x-7)}$



- ④ $5 \cdot 2^{-3(x-7)}$ ⑤ $5 \cdot 2^{-3(x-7)} - 11$

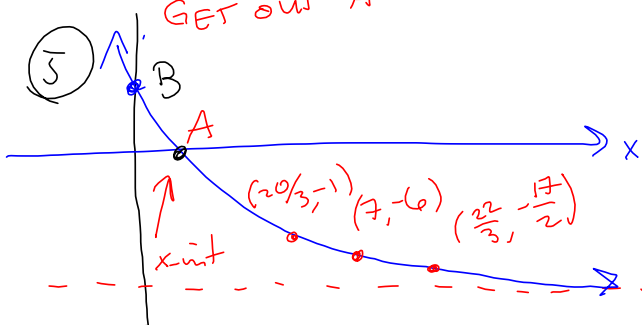


Now, to fine-tune
the x- & y-axes'
positions

$$g(0) = 5 \cdot 2^{-3(-7)} - 11 = 5 \cdot 2^{21} - 11 = \text{Positive } y\text{-intercept}$$

\downarrow Huge
 \downarrow not-huge

DON'T MAKE ME
GET OUT A CALCULATOR



x-axis needs to
be above all those
points, because all
the y-values
are negative!

Use your eyes & your
brain!

$$A = \left(\frac{\log_2\left(\frac{4}{5}\right) - 21}{-3}, 0 \right)$$

$$B = (0, 5 \cdot 2^{21} - 11)$$

See next page for the
equation I solved, please.

x-int: STANDARD equation to be asked to solve

$$5 \cdot 2^{-3x+21} - 11 = 0$$

$$5 \cdot 2^{-3x+21} = 11$$

$$2^{-3x+21} = \frac{11}{5}$$

$$\log_2(2^{-3x+21}) = \log_2\left(\frac{11}{5}\right)$$

$$-3x+21 = \log_2\left(\frac{11}{5}\right)$$

$$-3x = \log_2\left(\frac{11}{5}\right) - 21$$

$$x = \frac{\log_2\left(\frac{11}{5}\right) - 21}{-3}$$