

Name: _____

Math 131 Quiz #1

1. a) Simplify $ab(-ab)^3$
 $= ab(-ab)(-ab)(-ab)$
 $= -a^4b^4$

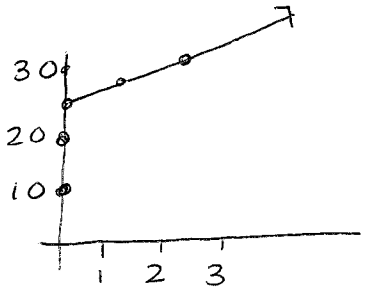
b) Expand and simplify $(\sqrt{1} + \sqrt{2})^2$
 $= (\sqrt{1} + \sqrt{2})(\sqrt{1} + \sqrt{2})$
 $= \sqrt{1}\sqrt{1} + \sqrt{1}\sqrt{2} + \sqrt{2}\sqrt{1} + \sqrt{2}\sqrt{2}$
 $= 1 + \sqrt{2} + \sqrt{2} + 2 = 3 + 2\sqrt{2}$

2.) Suppose that a blue whale is 24 feet long when it is born, and grows at a rate of 3 feet per month.

a.) Write an equation relating the length of the whale (L) and time (t)

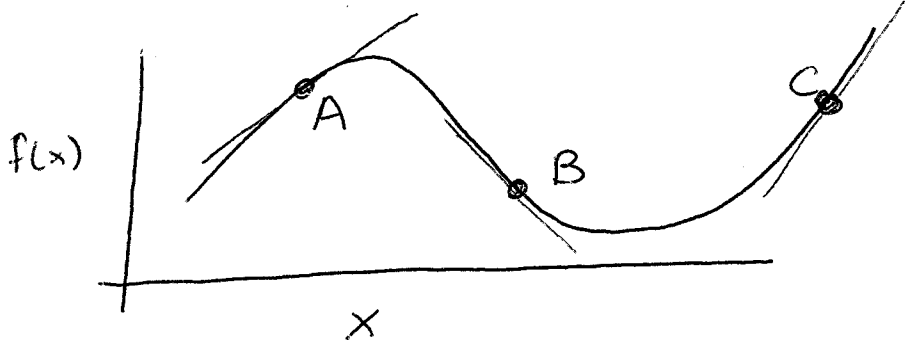
$$L = 3t + 24$$

b.) Draw a graph of this equation. You only need to worry about plotting $t \geq 0$.



| t | L |
|-----|-----|
| 0 | 24 |
| 1 | 27 |
| 2 | 30 |

3.a) Draw tangent lines to the graph of $f(x)$ at the points A, B, and C



b.) Is the rate of change of f positive or negative at each point?

- Point A: Positive
- Point B: Negative
- Point C: Positive