

Math 152

March 3, 2009

Quiz #6 A

Show Your Work!

Good Luck!

Name _____

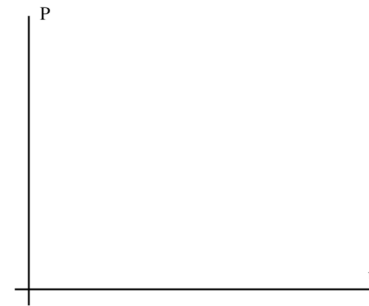
(please print)

1. $\frac{dP}{dt} = -2(P-7)\left(1 - \frac{P}{15}\right)$

(a) List the constant solutions,

(4) P = _____

(b) Sketch the **constant solutions** and the solutions with initial conditions P(0)=2, P(0)=10 and P(0)=20.



2. Circle each final answer

(a) $D(\arctan(x^3)) =$

(b) $\frac{d}{dx}(x^2 \cdot \arcsin(5x)) =$

(2) (2)

3. Circle each final answer. **Do not simplify.**

(a) $\int \frac{7}{16+x^2} dx =$

(b) $\int \frac{3}{\sqrt{4-(x+1)^2}} dx =$

(3) (3)

4. (a) $\int_3^{\infty} \frac{5}{x^3} dx =$ _____ (number or Diverge) (b) $\int_0^3 \frac{1}{\sqrt{3-x}} dx =$ _____ (number or Diverge)

(3) (3)

5. (a) What is Persi Diaconis' main interest besides mathematics? _____

(2) (b) What was Archimedes doing just before he yelled "Eureka"? _____