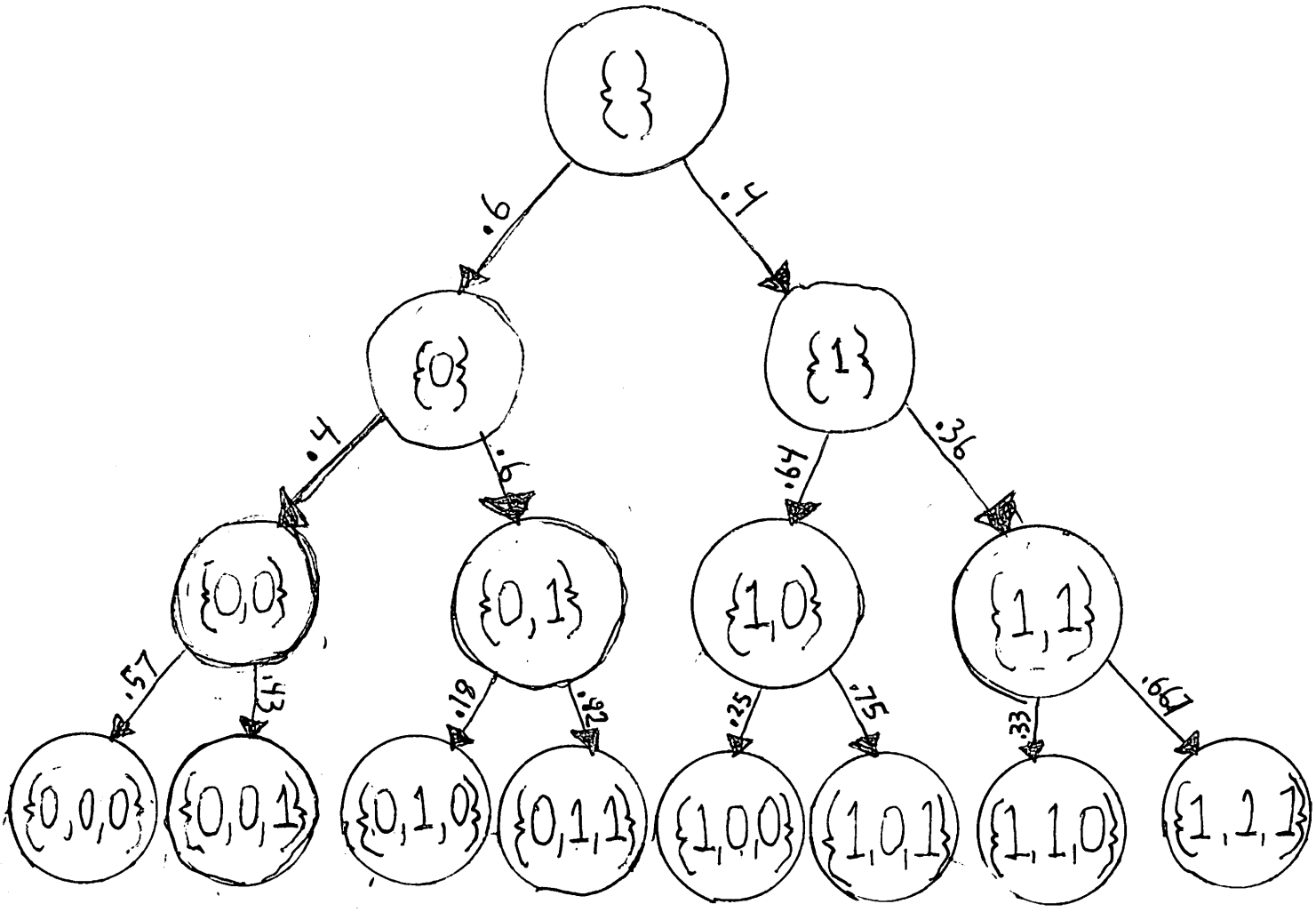
Jacob Wolfe


{}
.6
.4
{0}
{1}
.4
.6
.64
.36
{0,0}
{0,1}
{1,0}
{1,1}
.57
.43
.18
.82
.25
.75
.33
.67
{0,0,0}
{0,0,1}
{0,1,0}
{0,1,1}
{1,0,0}
{1,0,1}
{1,1,0}
{1,1,1}

11:57 – 12:10

+10/10 Good!

Math 172 Quiz 2 7 September 2018 Please put your name on the **back** of this sheet.

INSTRUCTIONS: You may use your brain, a pen/pencil, and scratch paper on this Quiz – and No Other Resources!

Please show all of your work. Answers without justification will receive no points.

1. Please compute the integral below.

$$\int \arcsin x \, dx$$

$= x\arcsin(x) - \int \frac{x}{\sqrt{1-x^2}}\,dx = \frac{1}{2}\int \frac{1}{\sqrt{w}}\,dw$

$u = \arcsin x \quad dv = 1\,dx$

$du = \frac{1}{\sqrt{1-x^2}} \quad v = x$ ✓

$w = 1-x^2$

$dw = -2x\,dx$

$\frac{1}{2}\int w^{-\frac{1}{2}}\,dw$

$\frac{1}{2}\cdot 2w^{\frac{1}{2}} = \sqrt{1-x^2}$

+5

$= x\arcsin(x) - \sqrt{1-x^2} + C$

2. Please compute the integral below.

$$\int (t+1)e^{2t}\,dt$$

$= \frac{1}{2}(t+1)e^{2t}$

$u = (t+1) \quad dv = e^{2t}\,dt$

$du = 1 \quad v = \frac{1}{2}e^{2t}$

+5

$\frac{1}{2}\cdot\int e^{2t} = \frac{1}{2}(t+1)e^{2t} - \frac{1}{4}e^{2t} + C$

$= \frac{1}{2}\cdot\frac{1}{2}e^{2t} = \frac{1}{4}e^{2t}$