

Total = 12 points
Please show all your work.

1. (3 pts) Suppose that the ratio of female students to male students in a calculus class is 42:35. What percentage of this calculus class are female students?

Total students $42 + 35 = 77$

$$\frac{42}{77} = 55\% \text{ percentage of female students}$$

2. (3 pts) Solve for x:

$$x + 0.14x - 3 = 2.5 - 1.57x$$

$$1.14x + 1.57x = 2.5 + 3$$

$$2.71x = 5.5$$

$$x = \frac{5.5}{2.71} = 2.03$$

Answer 2.03

3. (3 pts) Solve for t:

$$\frac{4-3t}{7} = \frac{3t}{4}$$

$$4(4-3t) = 7 \times 3t$$

$$16 - 12t = 21t$$

$$16 = 33t$$

$$t = 16/33$$

Answer 0.48

4. (3 pts) Solve the equation $x^2 - 10x = 24$

$$(x-5)^2 - 25 = 24$$

$$(x-5)^2 = 24 + 25 = 49 \quad \text{or}$$

$$x-5 = \pm 7$$

$$x = 12, -2$$

$$x = \frac{10 \pm \sqrt{100 + 96}}{2} = \frac{10 \pm \sqrt{196}}{2}$$

$$= \frac{10 \pm 14}{2} = 5 \pm 7 = 12, -2$$