

# 11 Quiz 11 MAT 1275 Professor Chiu

Name: \_\_\_\_\_

- This quiz consists of **2** questions, each worth 5 points for a total of **10** points.
- You have **15** minutes to complete the quiz.
- Show all work and justify your answers.
- Scientific calculators are allowed.
- Wishing you success.

1. Solve for  $x$ :

① Simplify on both sides:

$$4(x - 3) = 3(2x + 6) + 2x$$

$$4x - 12 = 6x + 18 + 2x$$

$$\Rightarrow 4x - 12 = 8x + 18$$

$$\Rightarrow -12 = 4x + 18$$

$$\Rightarrow -30 = 4x$$

$$\Rightarrow \frac{-30}{4} = \frac{4x}{4}$$

$$-\frac{15}{2} = x$$

$$\Rightarrow x = -\frac{15}{2}$$

② Solve for  $x$  (isolate  $x$ )

2. Suppose an object has a height  $-16t^2 + 48t + 64$  at when the stopwatch reads  $t$  seconds. At what time does it hit the ground?

① height =  $-16t^2 + 48t + 64$

hit the ground  $\Rightarrow$  height = 0

$$\Rightarrow -16t^2 + 48t + 64 = 0$$

② Simplify the left hand side by GCF:  $-16(t^2 - 3t - 4) = 0$

③ Factor " $t^2 - 3t - 4$ "  $\Rightarrow t^2 - 3t - 4 = 0$

$$(t+1)(t-4) = 0$$

④  $\square \cdot \triangle = \text{zero}$

$$\Rightarrow t+1 = 0 \text{ or } t-4 = 0$$

$$\Rightarrow \square = \text{zero or } \triangle = \text{zero}$$

$$\Rightarrow \cancel{t = -1} \text{ or } \boxed{t = 4} \text{ (time is positive)}$$

