

1. Use of cell phones is NOT allowed.
2. Answers without supporting work will NOT be given credit.
3. You have **18 minutes** to complete this quiz.

Name:

Serial:

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1. Solve the DE

$$y'' - xy' + 2y = 0$$

2. **[Bonus]** The sum of the **indicial roots** of the regular singularity  $x = 0$  of the DE

$$3xy'' + (2 - x)y' - y = 0$$

is

- (a)  $\frac{1}{2}$
- (b) 2
- (c)  $\frac{1}{3}$
- (d)  $\frac{-2}{3}$

3. **[Bonus]** The point  $x = 0$  of the DE

$$xy'' + (\sin x)y = 0$$

is

- (a) an ordinary point
- (b) a regular singular point
- (c) an irregular singular point
- (d) we can not determine

**Reason:**