

**GRADE 10 MATH**  
**UNIT A**  
**PRACTICE TEST**  
**LINEAR MODELS**

Show work for maximum marks. Round all answers to 2 decimal places unless otherwise indicated.

Use the supplied table of conversions and geometric formulas

You are allowed one page of notes. Selected formulas are provided at the end.

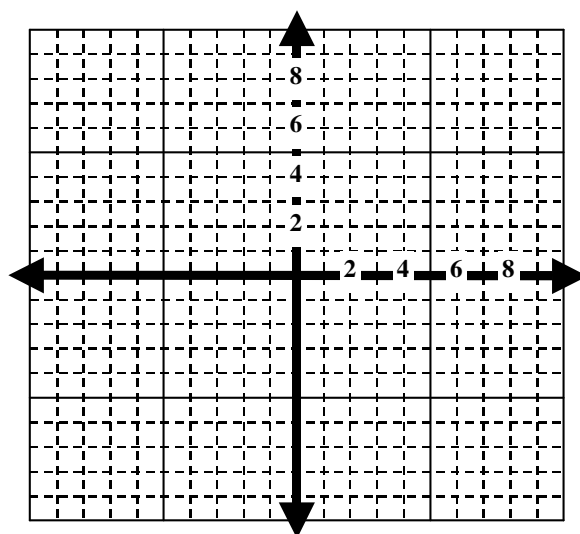
1. Graph and label the lines using a data or 't-table':

a.  $y = 2x - 6$

x	y
-2	
0	
2	
5	

b.  $y = -\frac{1}{2}x + 4$

x	y

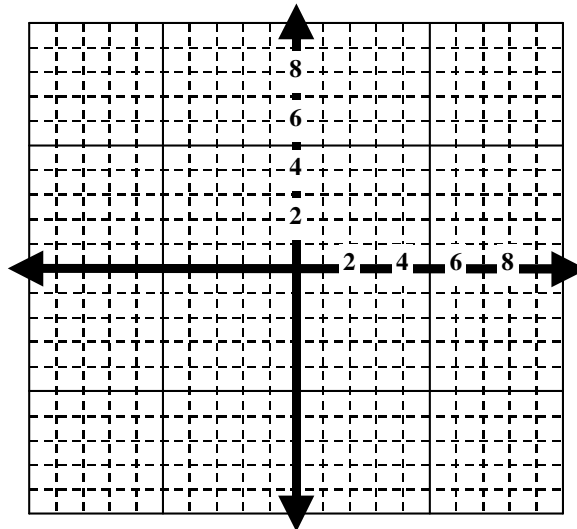


*Select your own x's for this one*

2. Graph and label the lines using just slope and intercept.

a.  $y = 2x - 8$

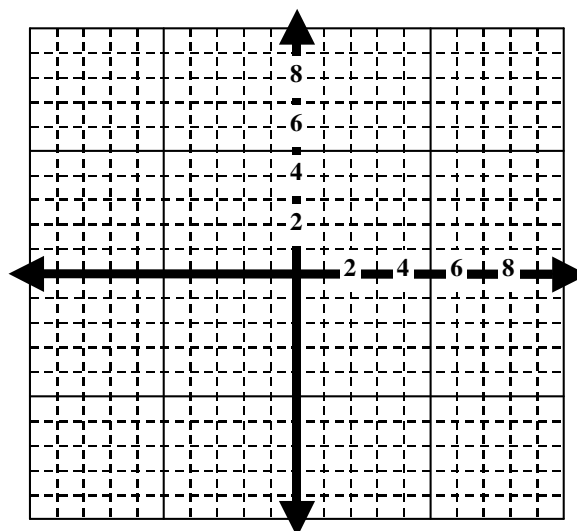
b.  $y = -\frac{1}{2}x + 6$



3. Graph and Label the lines below that are given in the standard form:

a.  $2x + 3y = 18$

b.  $-2x + y = 8$

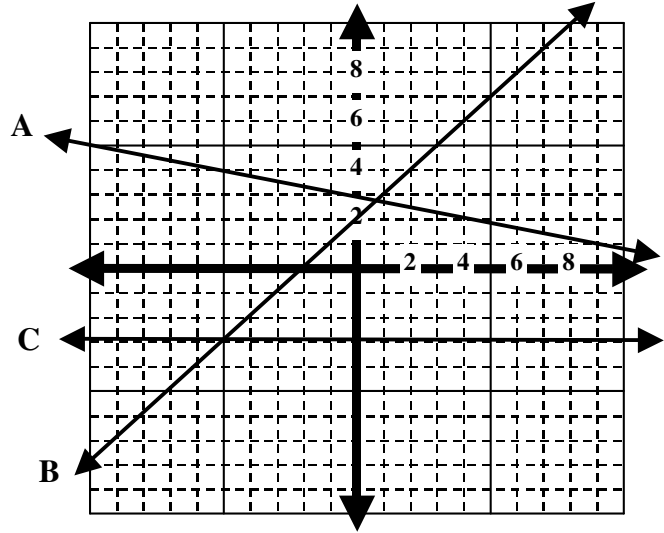


4. Calculate the slope of the lines:

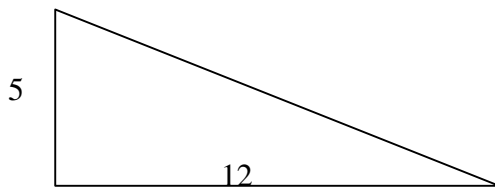
a. Line A: slope = \_\_\_\_\_

b. Line B: slope = \_\_\_\_\_

c. Line C: slope = \_\_\_\_\_



5. Find the length of the missing side on the right-angle triangle:



6. Calculate the slope between the given points

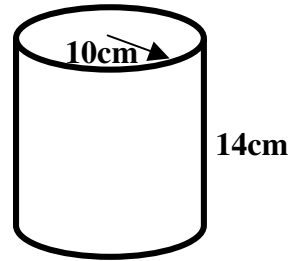
a.  $(2, 5)$  and  $(6, 9)$ . Slope = \_\_\_\_\_

b.  $(-2, 4)$  and  $(-6, 8)$ . Slope = \_\_\_\_\_

c.  $(-5, 4)$  and  $(-10, 8)$ . Slope = \_\_\_\_\_

7. Find the volume and the surface area of the cylinder at the right. (Use as accurate a  $\pi$  as you can from your calculator).

a. Volume:



b. SA:

### Selected Formulas

$y = mx + b$ . Slope and Intercept form of a line where  $m$  is the slope and  $b$  is the y-intercept.

$ax + by = c$ . General Form of a line.

$$\text{slope} = \frac{\text{rise}}{\text{run}} = \frac{\text{change in } y}{\text{change in } x} = \frac{y_2 - y_1}{x_2 - x_1}$$

$$\text{Vol}_{\text{sphere}} = \frac{4}{3}\pi r^3$$

$$\text{SA}_{\text{sphere}} = 4\pi r^2$$

$$\text{Vol}_{\text{cylinder}} = \pi r^2 h$$

$$\text{SA}_{\text{cylinder}} = 2\pi r^2 + 2\pi r h$$