

Name: _____

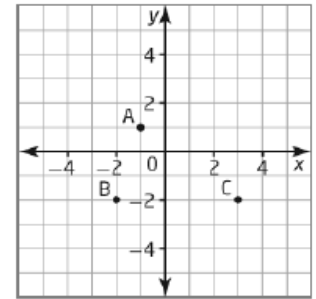
KU	APP	TIPS	COM
/11	/14	/15	/10

Multiple Choice (6 KU)

For questions 1 to 6, select the **best** answer. Write the letter of your choice in the provided blank space.

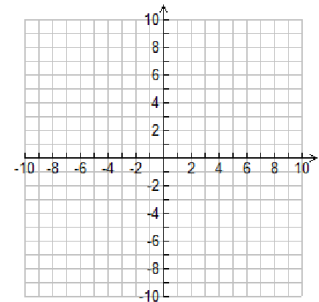
1. _____ Three points are shown at the right. Between which two points can you draw a line with a **negative** slope?

- (a) A and B (b) A and C
(c) B and C (d) None of these



2. _____ Find the slope of a line that passes through the points $(-10, 4)$ and $(5, -2)$.

- (a) $\frac{6}{15}$ (b) $-\frac{6}{15}$
(c) $\frac{15}{6}$ (d) $-\frac{15}{6}$



3. _____ Use first differences to determine which relation at the right is linear.

- (a) Only A. (b) Only B.
(c) Both A and B. (d) Neither

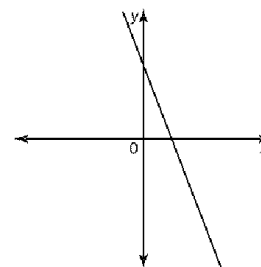
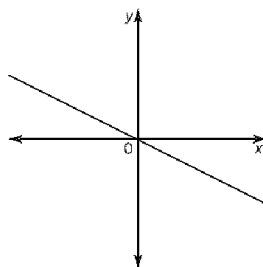
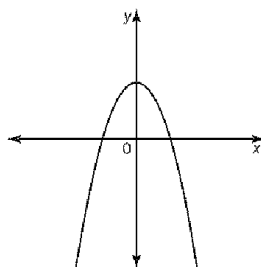
A		B	
x	y	x	y
-5	-15	8	1
-3	-10	6	-3
-1	-5	4	5
1	-2	2	-7

4. _____ Which equation represents a partial variation?

- (a) $y = -x^3 + 1$ (b) $y = -3x$ (c) $y = -3x + 1$ (d) none of these

5. _____ Which of the following graphs represents a partial variation?

- (a) (b) (c) (d) none of these



6. _____ A line passes through the point $(-6, -3)$ and has a slope of $\frac{2}{3}$. Which point is on the same line?

- (a) $(-9, -5)$ (b) $(-2, -1)$ (c) $(3, 4)$ (d) $(19, 13)$

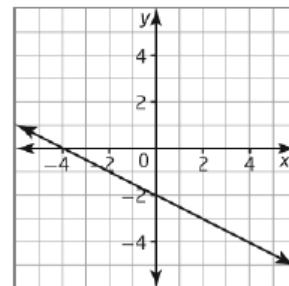
Full Solutions

Write complete solutions for each of the following problems.

7. Consider the graph given at the right. (5 KU)

(a) Calculate the slope

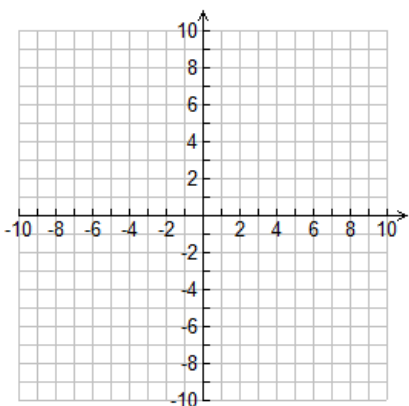
(b) Determine the y-intercept (i.e. the vertical intercept)



(c) Write an equation for the relation.

8. Consider the relation shown at the right in table form. (6 APP)

(a) Represent the relation graphically.



(b) Describe the relation using an equation.

(c) Describe the relation in words.
(Translate your equation into English.)

x	y
-1	3
0	1
1	-1
2	-3
3	-5

Sergeant Nolfi
has instructed me
to punish anyone
who gets this
question wrong!

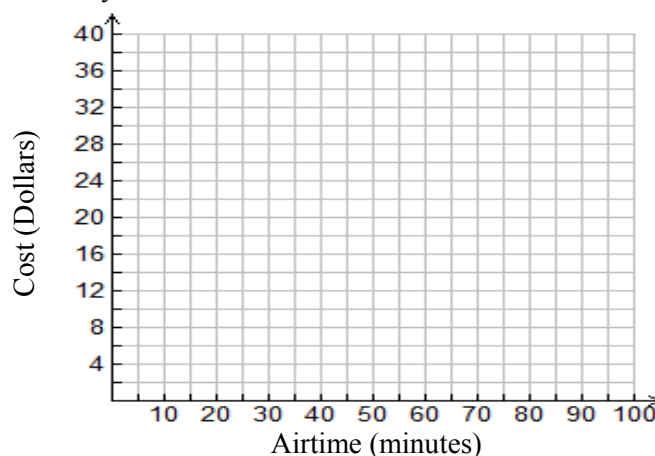


9. Saaya and Naxi have two different cell phone plans. Saaya pays a base fee of \$15 *plus* \$0.20 per minute of airtime used. Naxi, on the other hand, pays no base fee but must pay \$0.40 per minute of airtime used. (8 APP)

(a) Complete the following table.

Minutes of Airtime used (t)	Saaya's Cost (S)	Naxi's Cost (N)
0		
10		
20		
30		
40		
50		

(b) Use the following grid to graph the cell phone cost for both Saaya and Naxi.



(c) Write an equation for cell phone cost for both Saaya and Naxi.

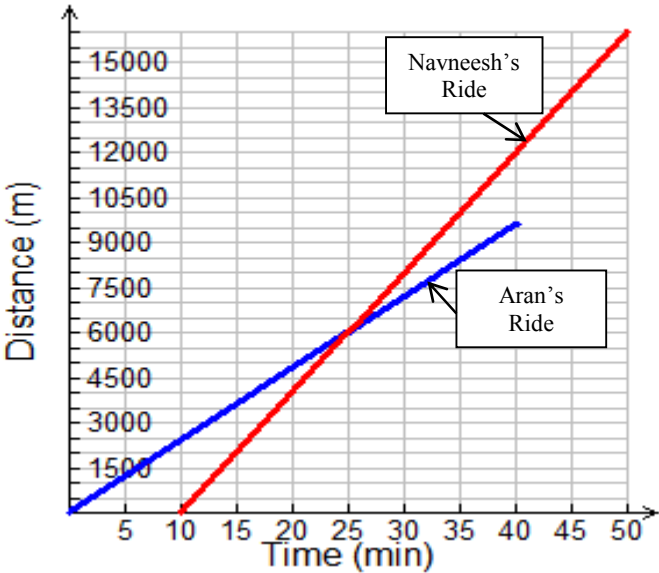
Saaya:

Naxi:

10. Navneesh and Aran rode their bicycles home from school. Aran left immediately after school while Navneesh stayed for a few minutes to finish the argument she was having with Uday. The graphs at the right show how distance varies with time for each of the students. (7 TIPS)

(a) What is each student’s speed? Show your calculations.

Aran	Navneesh



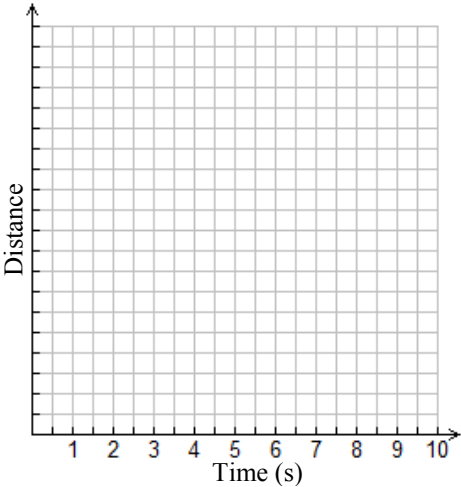
(b) How long did Navneesh stay after school?

(c) Who arrived home first? Explain

(d) Assuming that Navneesh and Aran followed exactly the same route home, at what time did Navneesh pass Aran?

11. Ayesha can run the length of the school field in 10 s. Vyshna takes twice as long to run the same distance while Loveleen takes only 7.5 s. (8 TIPS)

- (a) No scale has been provided for the vertical axis. Include a suitable, realistic scale for this axis. (Recall that an Olympic sprinter can run 100 m in about 10 s.)
- (b) Assuming that each student runs at a *constant speed*, use the grid at the right to sketch graphs of *distance* versus *time* for each of the runners. Label each graph clearly!
- (c) Explain why the slope of Ayesha’s graph is twice the slope of Vyshna’s graph.



(d) How does the slope of Loveleen’s graph compare to the slope of Ayesha’s graph? Explain.