

Conceptual Layering Through Grade Levels

Grades 4 – Algebra 2

Conceptual Layering idea = Slope, a.k.a. Rate of Change



Conceptual Layering Through Grade Levels

Look at the original problem.

What's the easiest way to solve it?

What concepts can be brought to bear on the question?

How else can the problem be solved?

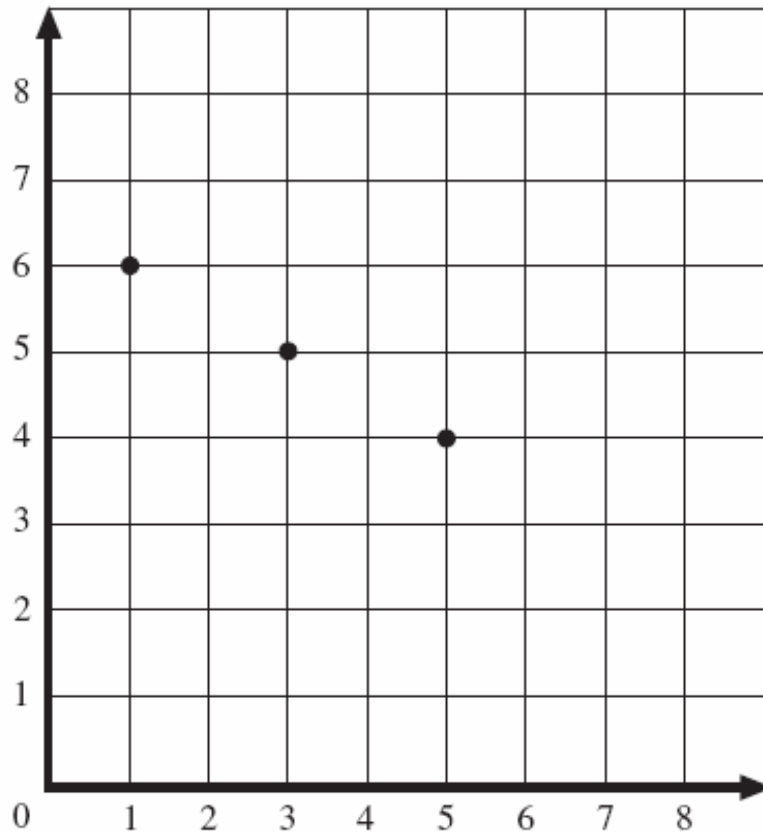
Can you ask other questions to deepen understanding?

Can you relate this problem to other problems/concepts?



64 Chu plotted 3 points on a grid. The 3 points were all on the same straight line.

If she plots another point on the line, what could be its coordinates?

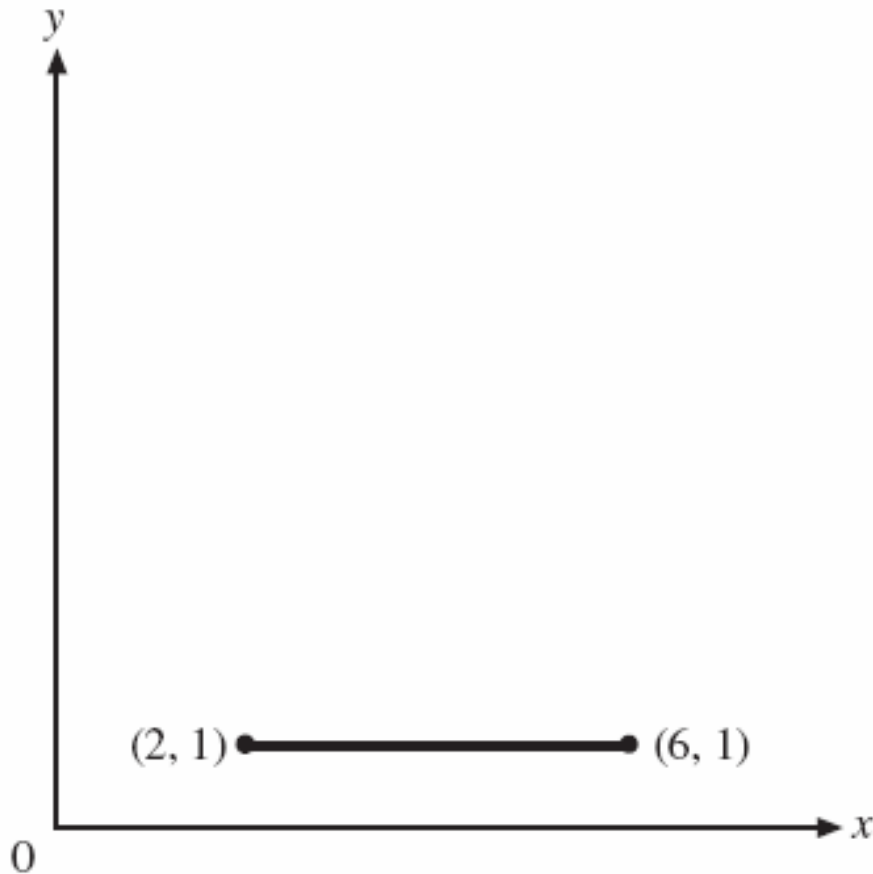


- A (2, 5)
- B (4, 4)
- C (6, 3)
- D (7, 3)

Grade 4 sample test question



65 Look at the line segment shown below.
What is the length of the line segment?

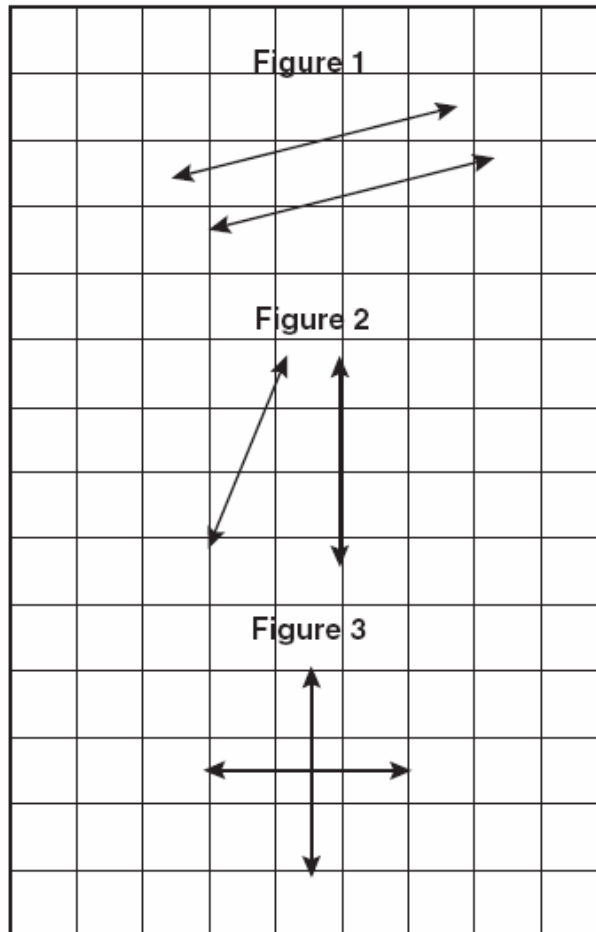


- A 1 unit
- B 2 units
- C 4 units
- D 6 units

Grade 4 sample test question



68 Which figures below show pairs of lines that appear to be parallel?

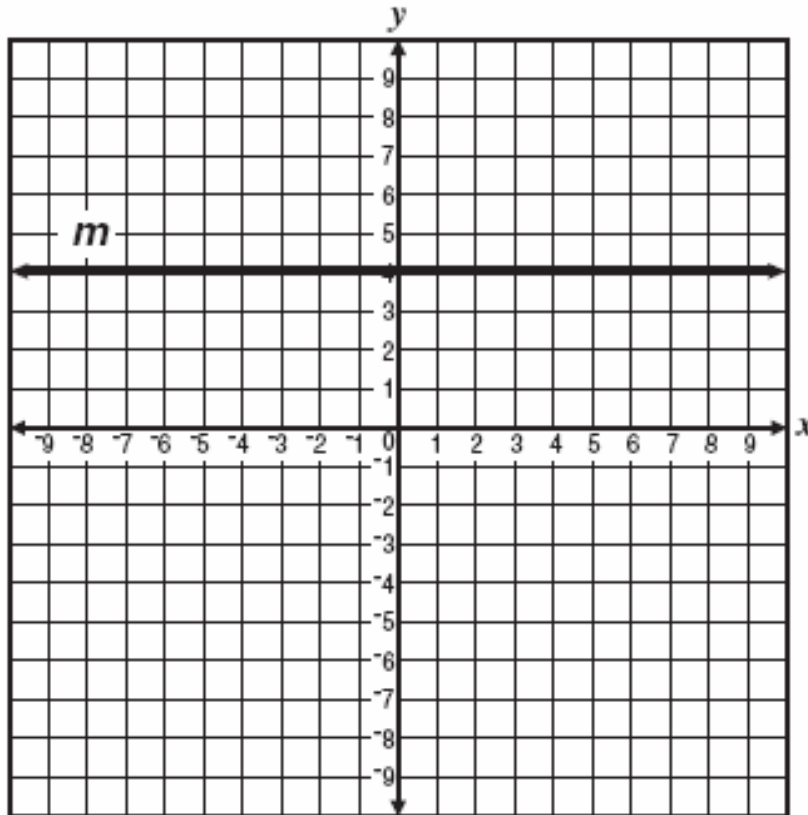


- A Figure 1 only
- B Figure 3 only
- C Figure 1 and Figure 2
- D Figure 2 and Figure 3

Grade 4 sample test question



- 53** Line m is represented by the equation $y = 4$.
Which ordered pair is located on line m ?

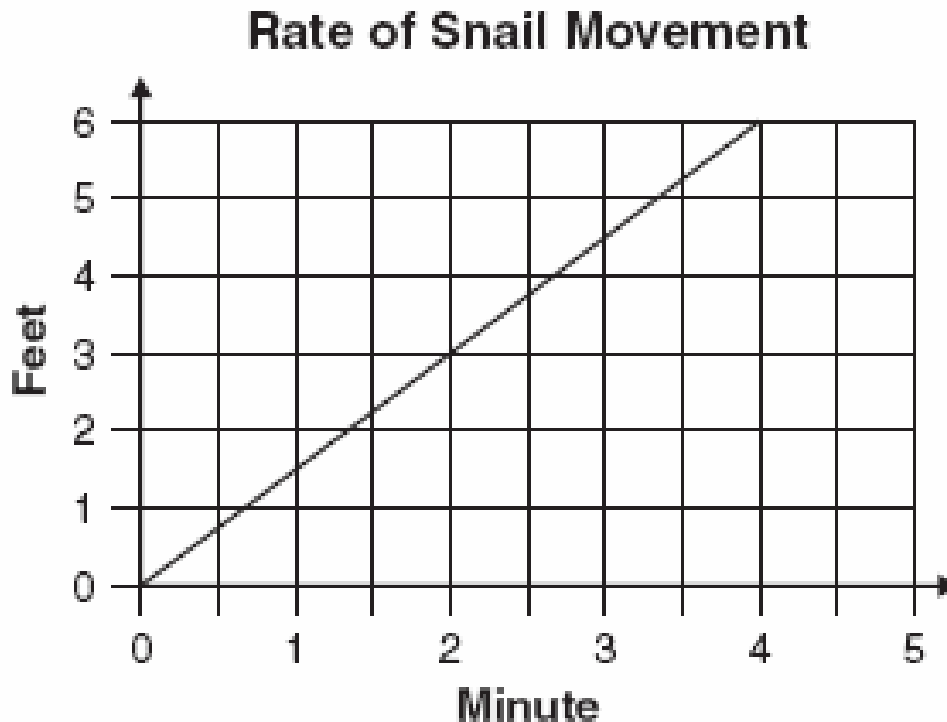


- A** (1, 4)
B (0, 0)
C (4, 1)
D (4, 0)

Grade 5 STAR test sample



50 A snail is trying to get to the other side of a park. At what rate is the snail traveling?



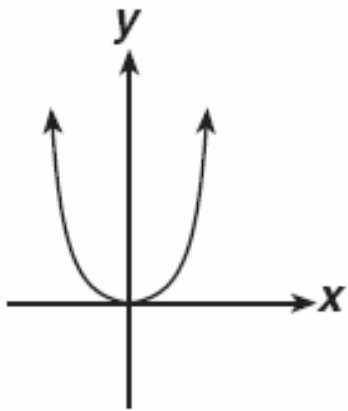
- A $\frac{1}{2}$ foot per minute
- B 1 foot per minute
- C $1\frac{1}{2}$ feet per minute
- D 2 feet per minute

Grade 6 sample test question

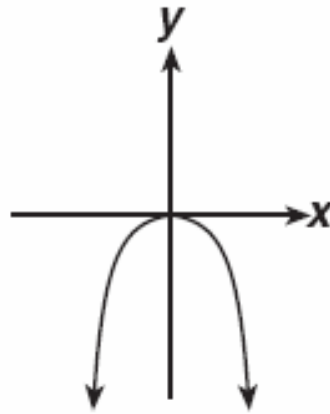


43

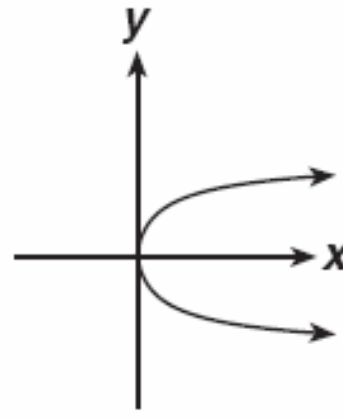
Which graph shows $y = -x^2$?



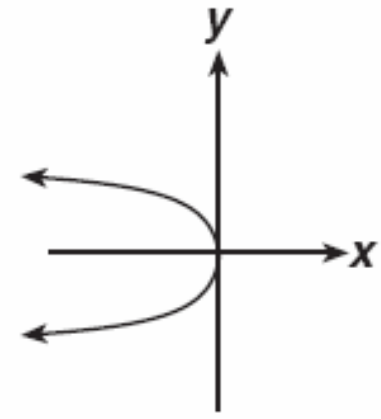
A



C



B

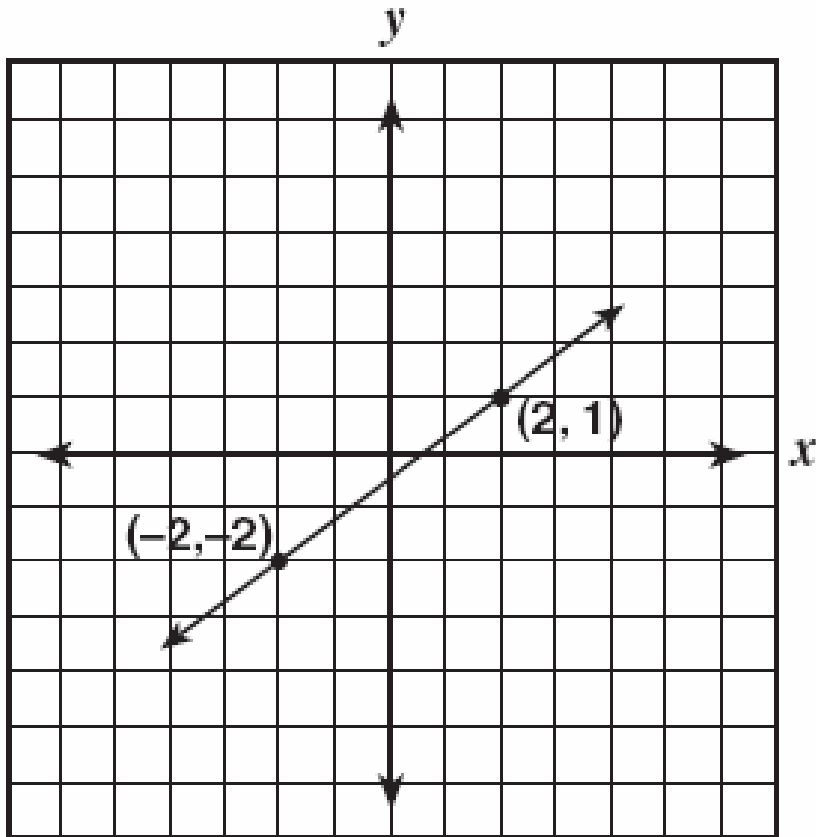


D

Grade 7 sample test question



45 What is the slope of this line?



- A $\frac{1}{2}$
- B $\frac{3}{4}$
- C 1
- D $\frac{4}{3}$

Grade 7 sample test question



33 Which equation represents a line that is parallel to $y = -\frac{5}{4}x + 2$?

A $y = -\frac{5}{4}x + 1$

C $y = \frac{4}{5}x + 3$

B $y = -\frac{4}{5}x + 2$

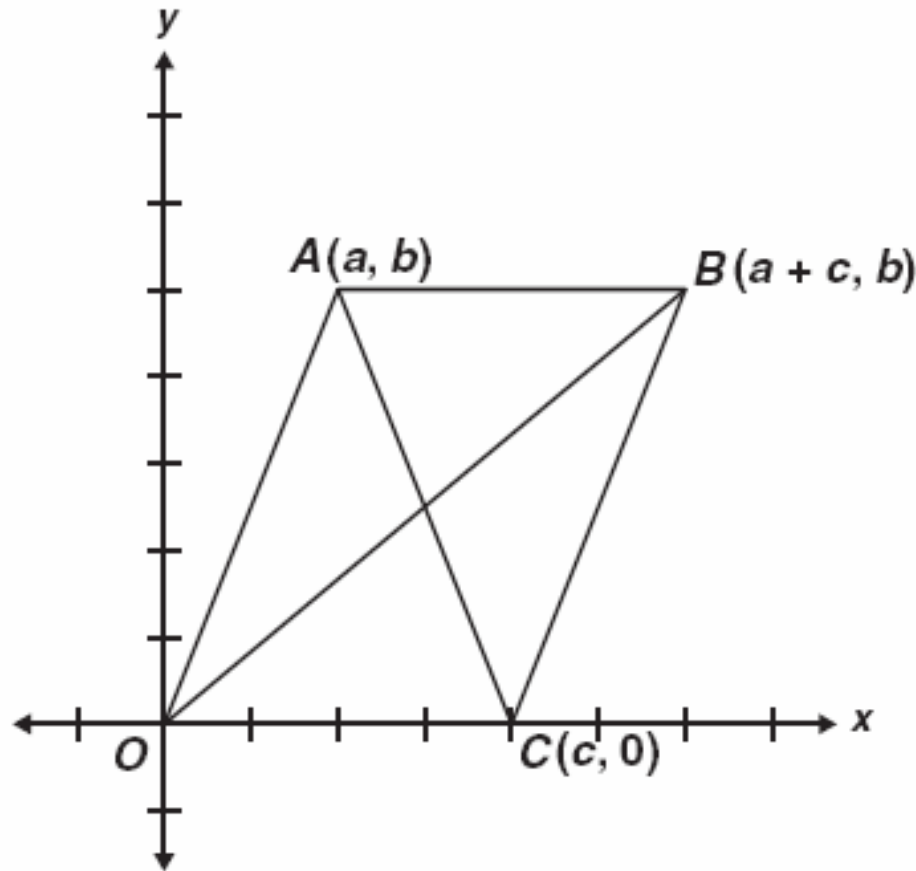
D $y = \frac{5}{4}x + 4$

Algebra 1 sample test question



59 Figure $ABCO$ is a parallelogram.

What are the coordinates of the point of intersection of the diagonals?



A $\left(\frac{a}{2}, \frac{b}{2}\right)$

B $\left(\frac{c}{2}, \frac{b}{2}\right)$

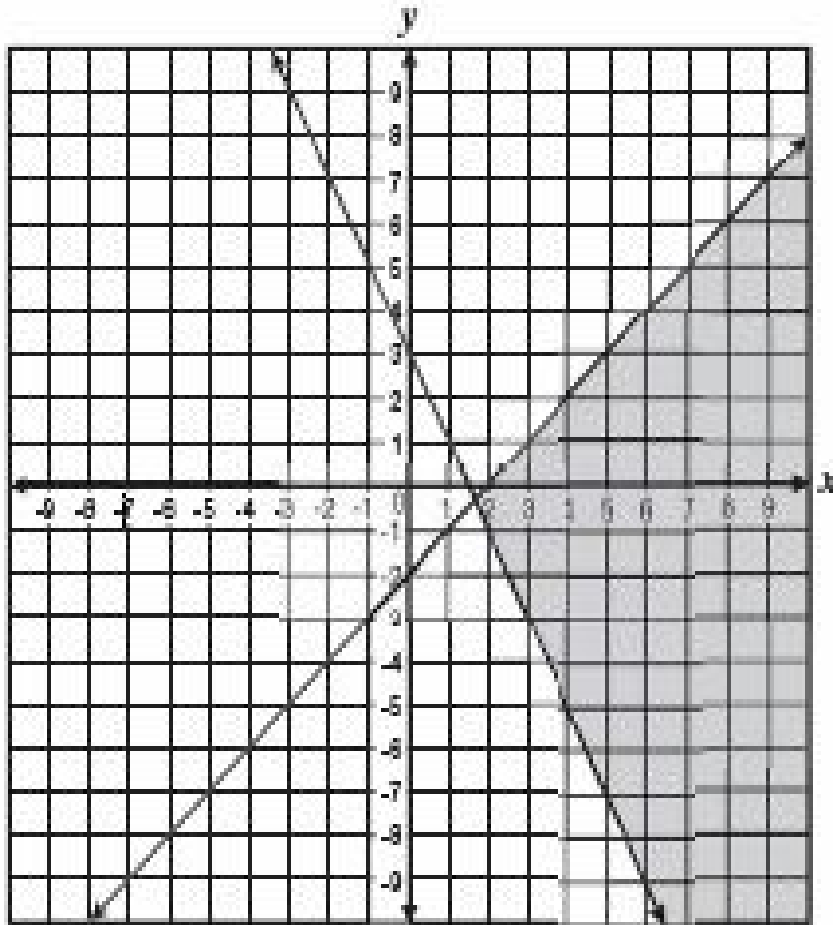
C $\left(\frac{a+c}{2}, \frac{b}{2}\right)$

D $\left(\frac{a+c}{2}, \frac{a+b}{2}\right)$

Geometry sample test question



8 Which system of linear inequalities is represented by this graph?



A
$$\begin{cases} y \geq \frac{1}{2}x + 3 \\ y \geq x - 2 \end{cases}$$

B
$$\begin{cases} y \geq 2x + 3 \\ y \leq x - 2 \end{cases}$$

C
$$\begin{cases} 2x - y \geq 3 \\ x + y \leq 2 \end{cases}$$

D
$$\begin{cases} 2x + y \geq 3 \\ x - y \geq 2 \end{cases}$$

Algebra 2 sample test question

