Kentucky Summative Assessments

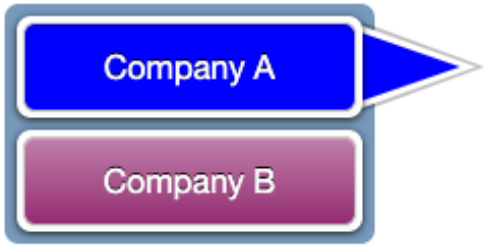
Grade 10 Mathematics
Released Items
2022

1 MA1020185

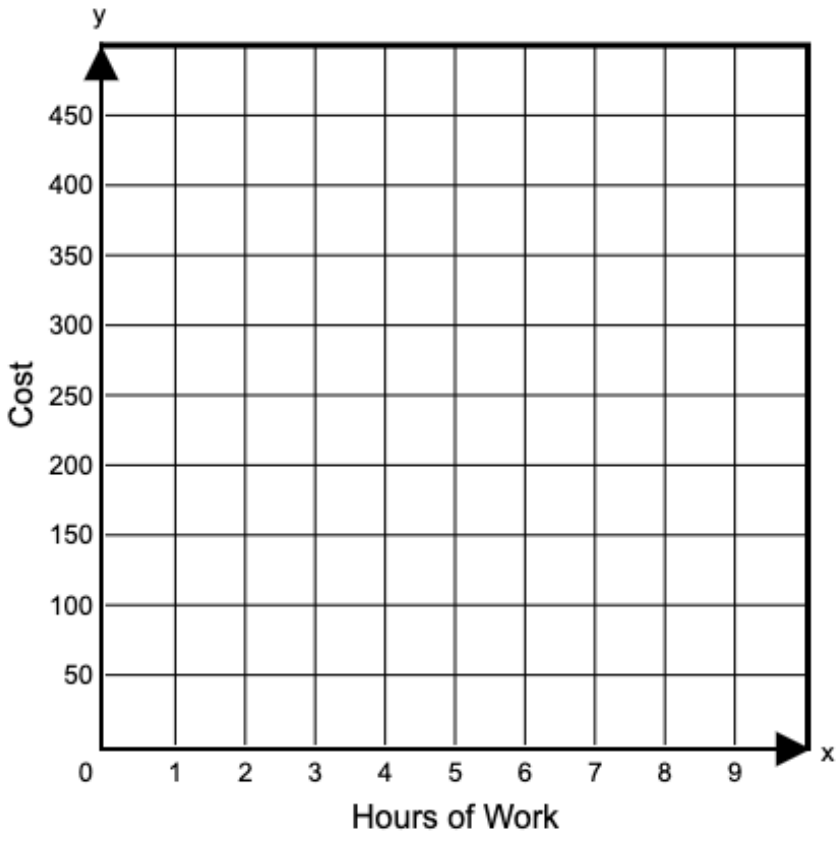
Part A

Cassidy compares the costs of two different automobile repair companies. Company A charges $200 for 2 hours of work and $275 for 5 hours of work. Company B charges $200 for 3 hours of work and $350 for 6 hours of work. Graph the system of equations that relates the hours of work, x, to the cost, y.

To graph each line, select two points on the coordinate plane. A line will be drawn through the points.



Automobile Repair Costs



GO ON

Part B

Describe how the equations of the lines on the graph relate to the situation. Include the equations in your descriptions.

Describe how the intersection of the lines on the graph relates to the situation. Include the intersection point in your description.

Enter your descriptions in the space provided.

- Math symbols
- Relations
- Geometry
- Groups
- Trigonometry
- Statistics
- Greek

2

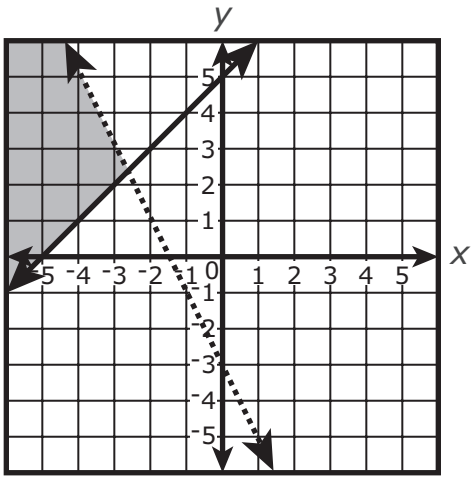
MA1020019_3

A system of linear inequalities is shown.

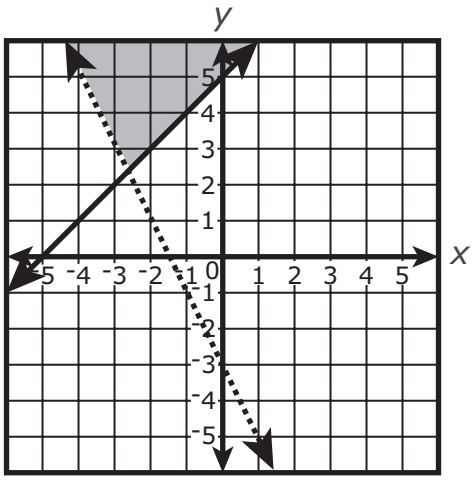
$$\begin{cases} y \leq x + 5 \\ y > -2x - 3 \end{cases}$$

Which graph represents the solution set of the system of linear inequalities?

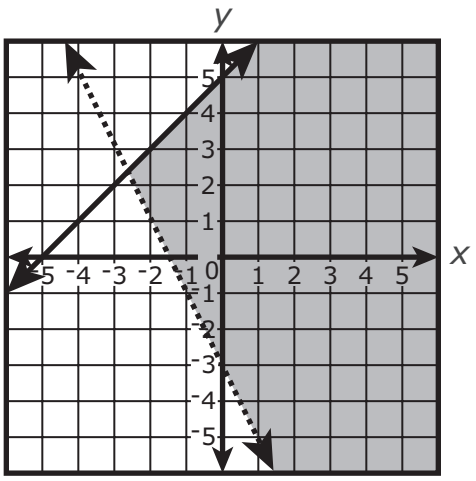
A



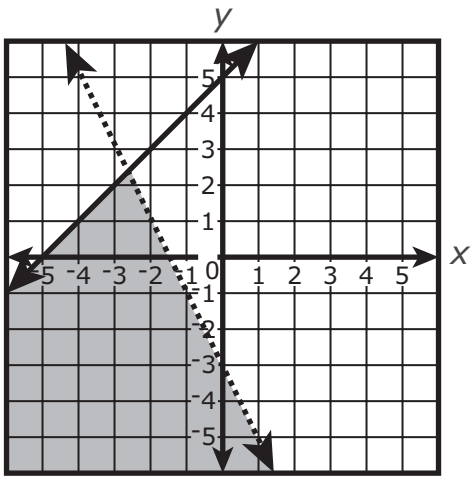
B



C



D



3

MA1020128_2

The function $f(x) = 1.73\,x^2 + 5.4x + 1{,}290$ can be used to predict the number of students enrolled in undergraduate classes in x years at a college. The function $g(x) = {}^-0.9\,x^2 - 4.3x + 720$ can be used to predict the number of students enrolled in graduate classes after x years at the same college. Which function, $h(x)$, can be used to predict the total enrollment in undergraduate and graduate classes at the college after x years?

A $h(x) = 0.83\,x^2 + 1.1x + 570$

B $h(x) = 0.83\,x^2 + 1.1x + 2{,}010$

C $h(x) = 2.63\,x^2 + 9.7x + 570$

D $h(x) = 2.63\,x^2 + 9.7x + 2{,}010$

4

MA1019066_4

The ordered pairs that describe the locations of three vertices of a parallelogram on a coordinate plane are given.

$({}^-5, 5)$ $({}^-4, 8)$ $({}^-2, 2)$

Which ordered pair describes a possible location of the fourth vertex of the parallelogram?

A $(5, {}^-1)$

B $(1, {}^-5)$

C $({}^-5, {}^-1)$

D $({}^-1, 5)$

5

MA1020070_1,3

$\overleftrightarrow{AB}$ is parallel to $\overleftrightarrow{CD}$ and perpendicular to both $\overleftrightarrow{EF}$ and $\overleftrightarrow{GH}$. Which statements are true?

Select **two** correct answers.

A $\overleftrightarrow{EF}$ is parallel to $\overleftrightarrow{GH}$.

B $\overleftrightarrow{CD}$ is parallel to $\overleftrightarrow{GH}$.

C $\overleftrightarrow{EF}$ is perpendicular to $\overleftrightarrow{CD}$.

D $\overleftrightarrow{EF}$ is perpendicular to $\overleftrightarrow{GH}$.

E $\overleftrightarrow{AB}$ is parallel to $\overleftrightarrow{GH}$.

6

MA1020000_1

Which expression is equivalent to $\sqrt[3]{8^2}$?

A $8^{\frac{2}{3}}$

B $8^{\frac{3}{2}}$

C $(8^2)^3$

D $(8^3)^2$

7

MA1020170_2

Water from a concrete fish pond is lost due to evaporation[1]. The pond is inside of a greenhouse and so no rainwater can be added to the pond. The depth of the water in the pond decreases as shown in the table.

Pond Evaporation

Week	Depth (inches)
0	24
1	18
2	13.5
3	10.1
4	7.6
5	4.3
6	3.2
7	2.4
8	1.8

Which equation is the best model for the data?

A $y = 0.73\ (24.4)^x$

B $y = 24.4\ (0.73)^x$

C $y = 20.24x - 2.7$

D $y = {}^{-}2.7x + 20.24$

[1]evaporation–the process by which water changes from a liquid to a gas or vapor

STOP

Investing in Kentucky's Future, One Student at a Time