

Algebra and Functions

59. Which of the following inequalities represents the statement, “A number, x , decreased by 13 is less than or equal to 39”?

A $13 - x \geq 39$
B $13 - x \leq 39$
C $x - 13 \leq 39$
D $x - 13 < 39$

M03049

62. In a certain room, the number of chairs, c , is equal to 3 times the number of tables, t .

Which equation matches the information?

A $3 \cdot c = t$
B $3 \cdot t = c$
C $3 \cdot c = 3 \cdot t$
D $c \cdot t = 3$

M00104

60. A shopkeeper has x kilograms of tea in stock. He sells 15 kilograms and then receives a new shipment weighing $2y$ kilograms. Which expression represents the weight of the tea he now has?

A $x - 15 - 2y$
B $x + 15 + 2y$
C $x + 15 - 2y$
D $x - 15 + 2y$

M00110

63. At a local bookstore, books that normally cost b dollars are on sale for 10 dollars off the normal price. How many dollars does it cost to buy 3 books on sale?

A $3b - 10$
B $3b + 10$
C $3(b - 10)$
D $3(b + 10)$

M10375

61. Divide a number by 5 and add 4 to the result. The answer is 9.

Which of the following equations matches these statements?

A $4 = 9 + \frac{n}{5}$
B $\frac{n}{5} + 4 = 9$
C $\frac{5}{n} = 4$
D $\frac{n + 4}{5} = 9$

M00050

64. If $n = 2$ and $x = \frac{1}{2}$, then $n(4 - x) =$

A 1
B 3
C 7
D 10

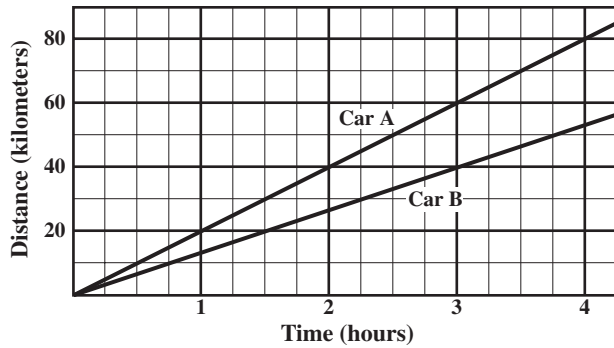
M00034

65. If $h = 3$ and $k = 4$, then $\frac{hk + 4}{2} - 2 =$

A 6
B 7
C 8
D 10

M00052

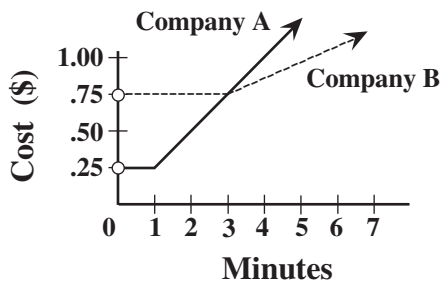
Algebra and Functions



66. After three hours of travel, Car A is about how many kilometers ahead of Car B?
- A 2
 - B 10
 - C 20
 - D 25

M00066

67. The cost of a long distance call charged by each of two telephone companies is shown on the graph below.

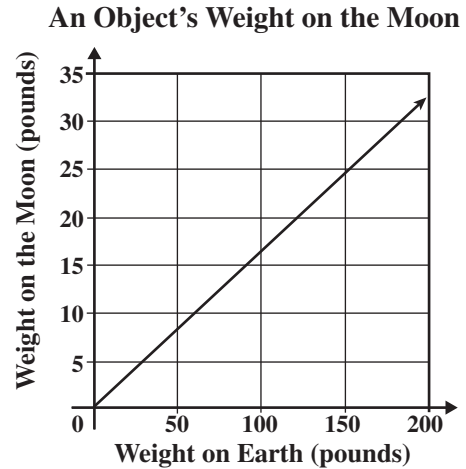


Company A is less expensive than Company B for

- A all calls.
- B 3 minute calls only.
- C calls less than 3 minutes.
- D calls longer than 3 minutes.

M02840

68. The graph below compares the weight of an object on Earth to its weight on the Moon.



What is the approximate weight on the Moon of an astronaut who weighs 120 pounds on Earth?

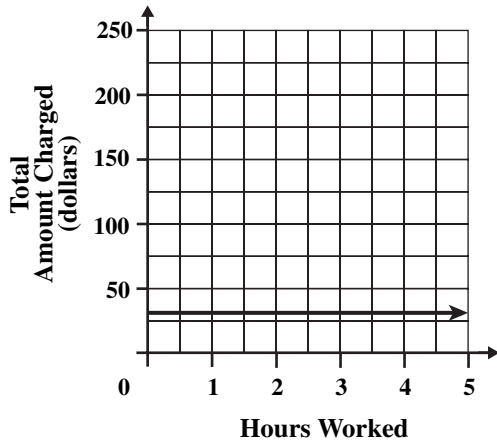
- A 15 pounds
- B 20 pounds
- C 25 pounds
- D 30 pounds

M10668

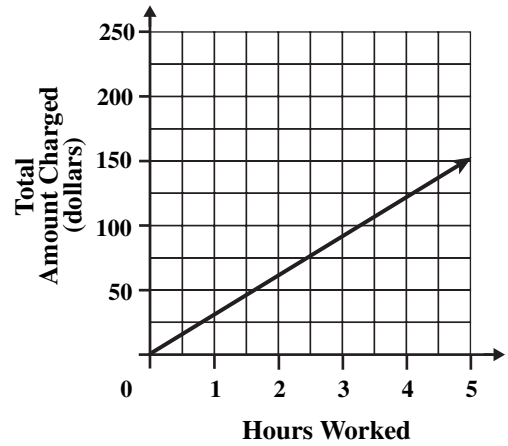
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69. Amy works as a computer consultant. She charges \$30 per hour for her work. Which graph shows the relationship between the number of hours Amy works and the amount of money she charges for her work?

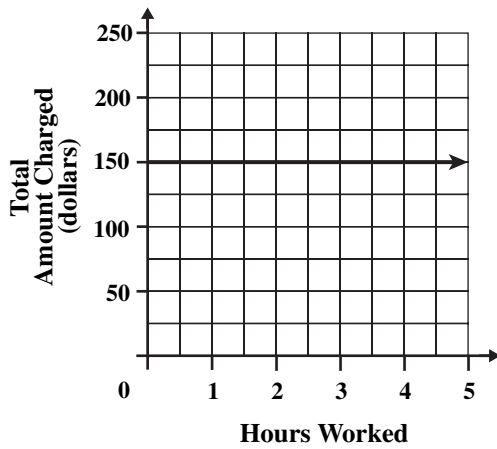
A



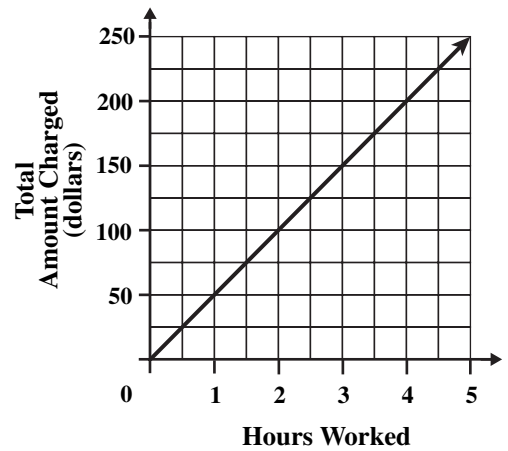
C



B



D



M21619

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70. $x^3y^3 =$

- A $9xy$
- B $(xy)^6$
- C $3xy$
- D $xxxyyy$

M02879

71. What does x^5 equal when $x = -2$?

- A -32
- B -10
- C $-\frac{1}{32}$
- D 32

M12857

72. Which of the following is equivalent to $(6x - 2)(6x - 2)(6x + 2)$?

- A $(6x - 2)^3$
- B $(6x + 2)^3$
- C $2(6x - 2)(6x + 2)$
- D $(6x - 2)^2(6x + 2)$

M12845

73. $\sqrt{4x^4} =$

- A 2
- B $2x$
- C $4x$
- D $2x^2$

M03067

74. Simplify the expression shown below.

$$(5x^2z^2)(8xz^3)$$

- A $40x^2z^6$
- B $40x^3z^5$
- C $40x^3z^6$
- D $40x^5z^5$

M02009

75. Simplify the expression shown below.

$$(6a^4bc)(7ab^3c)$$

- A $13a^4b^3c$
- B $13a^5b^4c^2$
- C $42a^4b^3c$
- D $42a^5b^4c^2$

M02109

76. Which expression is equivalent to $7a^2b \cdot 7bc^2$?

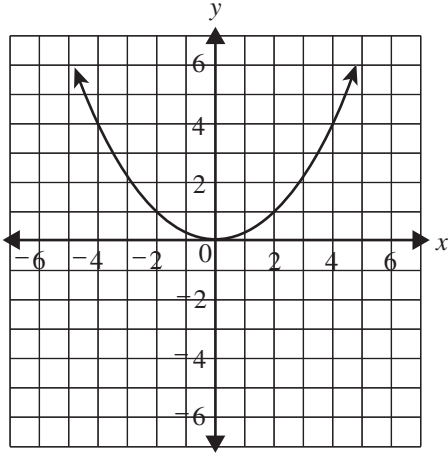
- A $14a^2b^2c^2$
- B $49a^2bc^2$
- C $49a^2b^2c^2$
- D $343a^2b^2c^2$

M12872

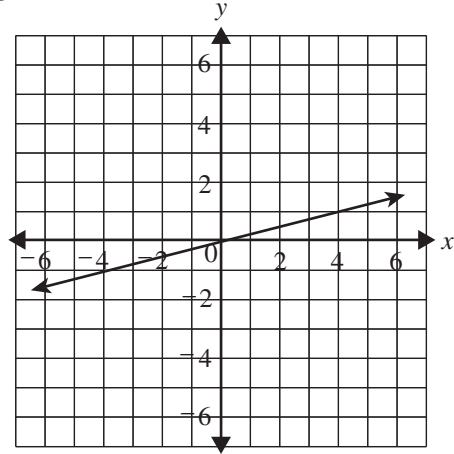
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77. Which of the following is the graph of $y = \frac{1}{4}x^2$?

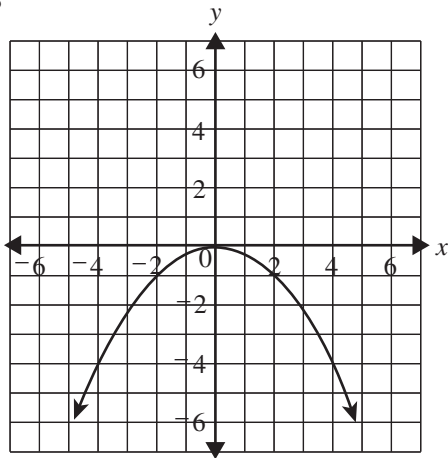
A



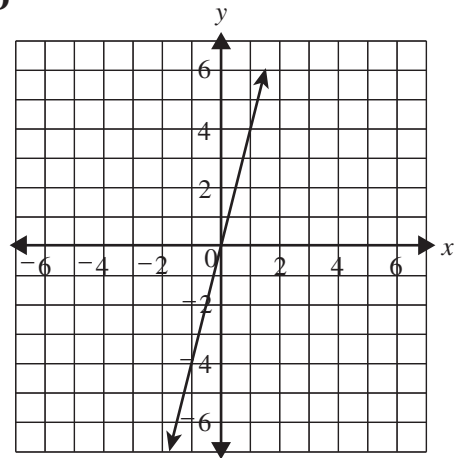
C



B



D

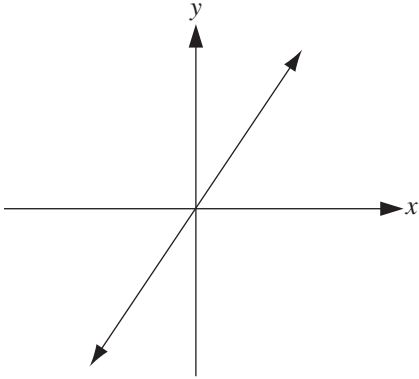


M03210

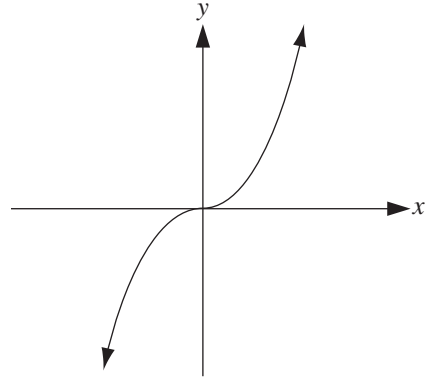
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78. Which of the following could be the graph of $y = x^3$?

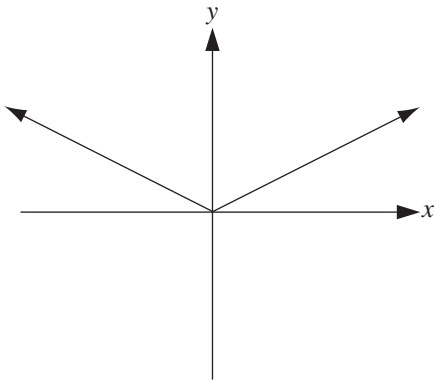
A



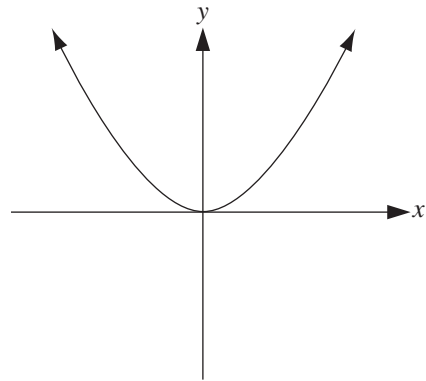
C



B



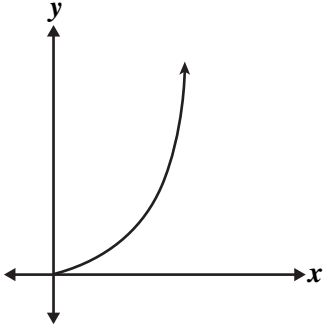
D



M02200

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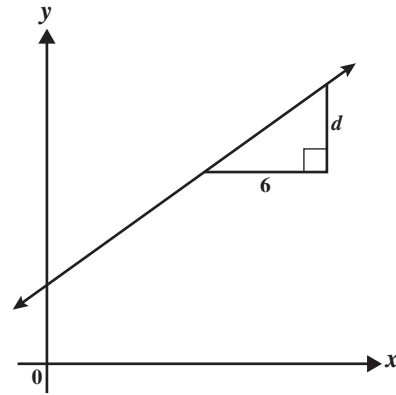
79. Which equation BEST represents the part of the graph shown below?



- A $y = 1.75x$
- B $y = 1.75x^2$
- C $y = -1.75x$
- D $y = -1.75x^2$

M10760

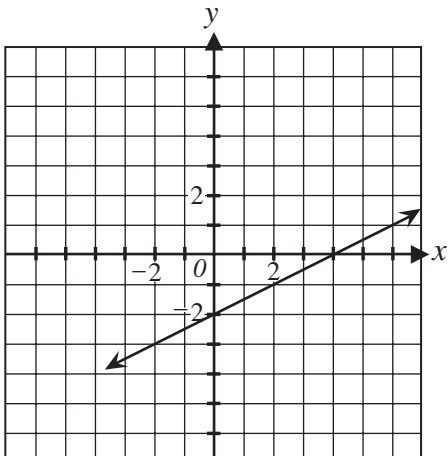
81. The slope of the line shown below is $\frac{2}{3}$.



What is the value of d ?

- A 3
- B 4
- C 6
- D 9

M02078



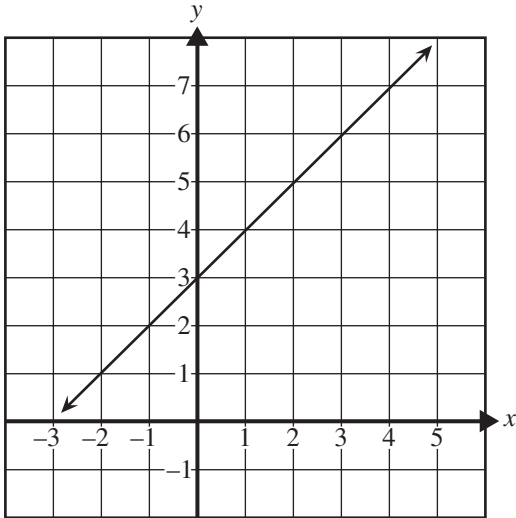
80. What is the slope of the line shown in the graph above?

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

M02556

Algebra and Functions

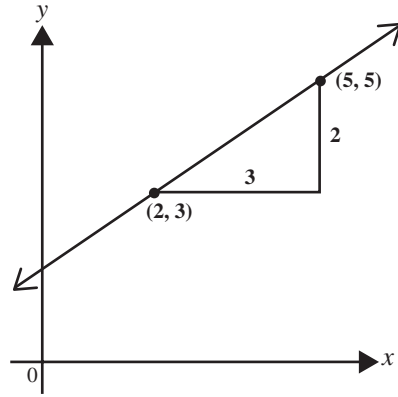
82. What is the equation of the graph shown below?



- A $y = x - 1$
- B $y = x + 1$
- C $y = x + 3$
- D $y = x - 3$

M02035

83. What is the slope of the line below?

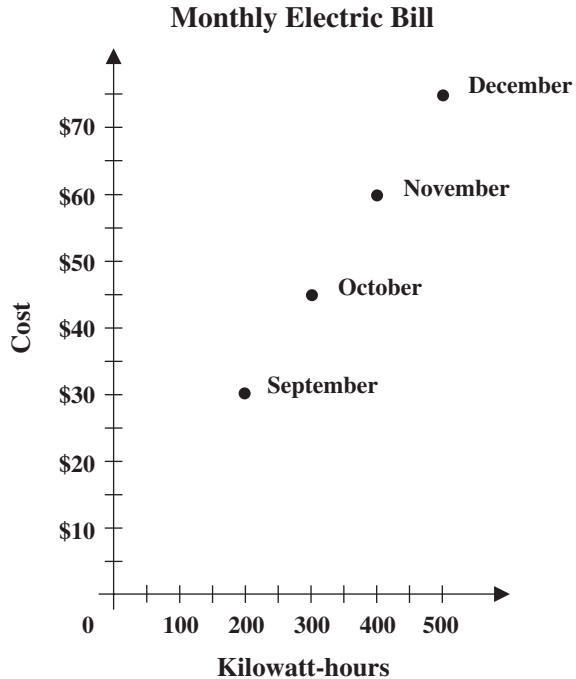


- A $-\frac{3}{2}$
- B $-\frac{2}{3}$
- C $\frac{2}{3}$
- D $\frac{3}{2}$

M02077

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84. The graph below shows Francine's electric bill for 4 different months. What is the price per kilowatt-hour of Francine's electricity?



- A \$0.15
B \$0.30
C \$1.50
D \$6.67

M02681

85. In the inequality $2x + \$10,000 \geq \$70,000$, x represents the salary of an employee in a school district. Which phrase most accurately describes the employee's salary?

- A At least \$30,000
B At most \$30,000
C Less than \$30,000
D More than \$30,000

M02621

86. Solve for x .

$$2x - 3 = 7$$

- A -5
B -2
C 2
D 5

M02771

Algebra and Functions

87. Solve for n .

$$2n + 3 < 17$$

- A $n < 2$
- B $n < 3$
- C $n < 5$
- D $n < 7$

M02040

90. Stephanie is reading a 456-page book. During the past 7 days she has read 168 pages. If she continues reading at the same rate, how many more days will it take her to complete the book?

- A 12
- B 14
- C 19
- D 24

M00380

88. The owner of an apple orchard ships apples in boxes that weigh 2 kilograms (kg) when empty. The average apple weighs 0.25 kg, and the total weight of a box filled with apples is 12 kg. How many apples are packed in each box?

- A 14
- B 40
- C 48
- D 56

M10327

91. Robert's toy car travels at 40 centimeters per second (cm/sec) at high speed and 15 cm/sec at low speed. If the car travels for 15 seconds at high speed and then 30 seconds at low speed, what distance would the car have traveled?

- A 1050 cm
- B 1200 cm
- C 1425 cm
- D 2475 cm

M10748

89. Brad bought a \$6 binder and several packs of paper that cost \$0.60 each. If his total was \$13.20, how many packs of paper did Brad buy?

- A 2
- B 6
- C 12
- D 22

M12223

92. Sara can ride her bicycle 3 miles in 15 minutes. At this rate, how many miles can she ride her bicycle in 50 minutes?

- A 5
- B 10
- C 15
- D 20

M12177