

OPTIONAL Summer Assignment 2019-2020

Block _____

Evaluate each expression.

1) $(-5) - 2$

2) $4 + 2 + (-6)$

3) $(-7) - (-4) - 4 + (-6)$

Find each product.

4) $(-8)(7)$

5) $(-2)(10)(10)$

6) $(-9)(5)(5)(-3)$

Find each quotient.

7) $\frac{50}{10}$

8) $\frac{\frac{1}{2}}{-\frac{4}{5}}$

Evaluate each expression.

9) $\frac{8 \cdot 2 - 1}{3 + 3 - 1}$

10) $3 \cdot \frac{6}{(2 - (5 - 4)) \cdot 2}$

11) $2 \cdot (6 - 5) \cdot 4(1 + 1)$

Draw a box-and-whisker plot for each data set.

12) Per Capita Income

Country	US \$	Country	US \$
Tajikistan	2,512	Guatemala	7,295
China	11,904	Malta	30,213
Costa Rica	13,872	Netherlands	43,404
Romania	18,635	Philippines	6,533
Paraguay	8,043	Brazil	15,034
Zambia	3,181		

13) Games per World Series

6 7 7 4 7 5 7 6
4

Simplify each expression.

14) $-7x - 5x$

15) $3(p - 10)$

16) $-4(1 - 4m) - 4$

17) $7(1 + 8r) - 5(8 + 3r)$

18) $8x(x - 2) + 6(x - 7)$

Solve each equation.

19) $p - 10 = -23$

20) $x + 20 = 35$

21) $-10r = -50$

22) $\frac{-4 + x}{8} = -2$

23) $-3 - 2n = 3$

24) $-2 = 3x - 5x$

25) $-331 = 7(5m - 8) + 5$

Simplify, but please leave your answer in exponential form. Your answer should contain only positive exponents.

26) 2^2

27) $(8^4)^2$

28) $8^2 \cdot 8^3$

29) $(8^{-2})^3$

30) $\frac{5^2}{5^4}$

List all positive factors of each.

31) 25

32) 30

Write the prime-power factorization of each.

33) 72

34) 75

Find each product.

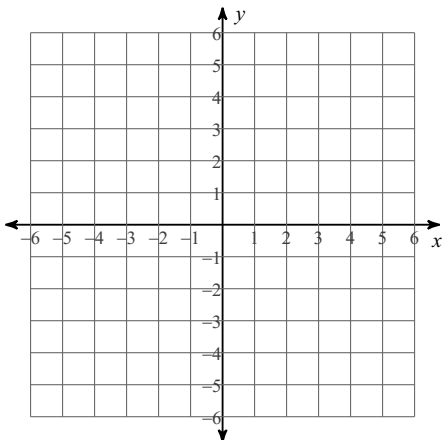
35) $(8)\left(-\frac{4}{3}\right)$

Find each quotient.

36) $\frac{-11}{8} \div \frac{2}{3}$

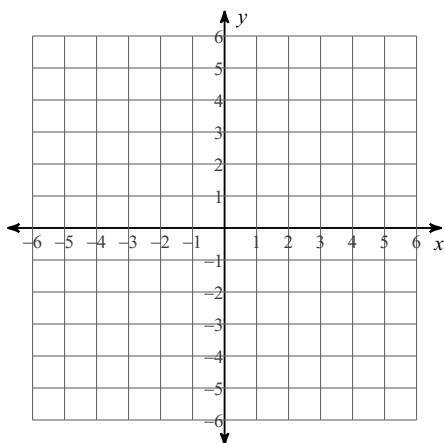
Sketch the graph of each line.

37) $y = -\frac{1}{4}x - 3$



Sketch the graph of each linear inequality.

38) $y \leq \frac{5}{2}x$



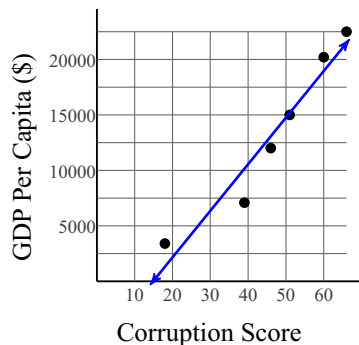
Find the GCF of each.

39) 48, 24

40) Economists have found that the amount of corruption in a country is correlated to the productivity of that country. Productivity is measured by gross domestic product (GDP) per capita. Corruption is measured on a scale from 0 to 100 with 0 being highly corrupt and 100 being least corrupt:

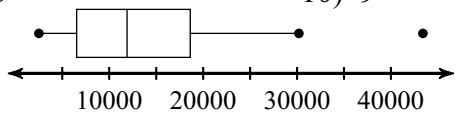
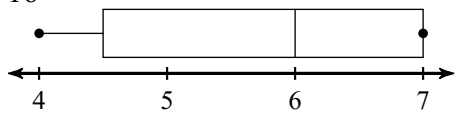
Corruption Score	GDP Per Capita (\$)
18	3,400
39	7,080
46	12,000
51	15,000
60	20,200
66	22,500

This can be modeled by the equation $y = 420x - 6240$ where x is the corruption score and y is GDP per capita in dollars.

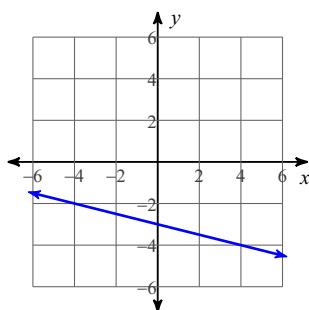


- a) What does the slope of the line represent?
- b) What does the y-intercept of this function represent?
- c) According to the model, what would be the GDP per capita of a country with a corruption score of 23? Round your answer to the nearest dollar.

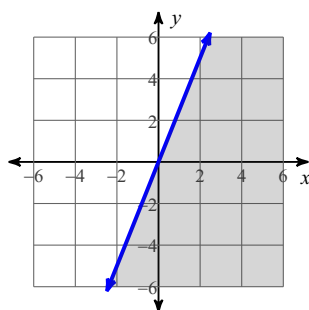
Answers to OPTIONAL Summer Assignment 2019-2020

- 1) -7 2) 0 3) -13 4) -56
 5) -200 6) 675 7) 5 8) $-\frac{5}{8}$
- 9) 3 10) 9
 12) 
 11) 16
 13) 
- 14) $-12x$ 15) $3p - 30$ 16) $-8 + 16m$ 17) $-33 + 41r$
 18) $8x^2 - 10x - 42$ 19) $\{-13\}$ 20) $\{15\}$ 21) $\{5\}$
 22) $\{-12\}$ 23) $\{-3\}$ 24) $\{1\}$ 25) $\{-8\}$
 26) 2^2 27) 8^8 28) 8^5 29) $\frac{1}{8^6}$
- 30) $\frac{1}{5^2}$ 31) $1, 5, 25$ 32) $1, 2, 3, 5, 6, 10, 15, 30$
 33) $2^3 \cdot 3^2$ 34) $3 \cdot 5^2$ 35) $-\frac{32}{3}$ 36) $-\frac{33}{16}$

37)



38)



39) 24

- 40) Slope: The increase in GDP per capita for every increase of one in corruption score
 Y-intercept: The GDP per capita of a country with a corruption score of zero
 $\$3,420$