

Math 10 Practice Test

From earoy.me/EducationalResources

This test was written in adherence to the concepts covered by the British Columbia Ministry of Education's 2024 Mathematics 10 curriculum. Full solutions key and walk-through provided on request by E A Roy at earoy.me online. Not for business use.

Question 1

- a) Draw $y = \sin(x)$ and label y at $0, \pi/2, \pi$
- b) Overplot of a, draw $y = 2\sin(x)$ and label y at $0, \pi/2, \pi$
- c) Evaluate y for $y = 2\sin(6\pi)$
- d) Evaluate y for $y = 5\sin(\frac{-3\pi}{2})$

Question 2

Consider the polynomial $y = 2x^3 + 3x^2 - 8x + 3$

- a) Prove that $(x - 1)$ is a factor of the above polynomial.
- b) Draw a graph of the function $y = (x - 1)$
- c) Draw a graph of the function $y = \frac{(2x^3+3x^2-8x+3)}{(x-1)}$

Question 3

Consider the function $y = 7x + 3$

- a) Draw a table of three x and y values that fit this function.

b) Draw a graph of this function.

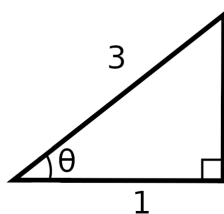
c) Repeat a and b for the function $3y = (\frac{1}{2})x + 15$

d) Repeat a and b for the function $-0.75y = x - 1$

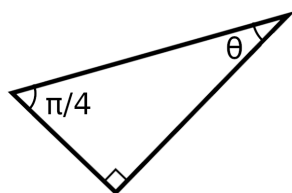
Question 4

Find θ in the following triangles:

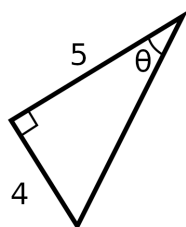
a)



b)



c)



Question 5

Evaluate x in the following expressions:

a) $0 = 3^2 + 4x - 6$

b) $(4 + 2x)(5 - 7)^3 = 1$

Question 6

Galen Weston, the CEO of the Canadian grocery conglomerate Loblaws, was paid \$11.7 million by his companies in 2022 (ctvnews.ca). His estimated net worth is \$11.8 billion (Wikipedia.org). Food Banks Canada costs approximately \$48.8 million to run each year (charityintelligence.ca). CIBC offers an interest rate of 1.7% in a standard savings account (cibc.com).

a) Assuming he keeps his entire wealth in a flat 1.7% yearly interest rate savings account, does he receive more money from Loblaws or from the bank? By how much in one year?

b) If the Canadian government taxed 90% of his yearly income over the first \$10 million (including capital interest gains from the bank), how much of Food Banks Canada's yearly budget would Galen Weston's taxes fund?

Question 7

a) Evaluate the third term in the sequence $a_1 = 0$ $a_{n+1} = na_n + 1$

b) Evaluate the sum of the first five terms of the series in a)

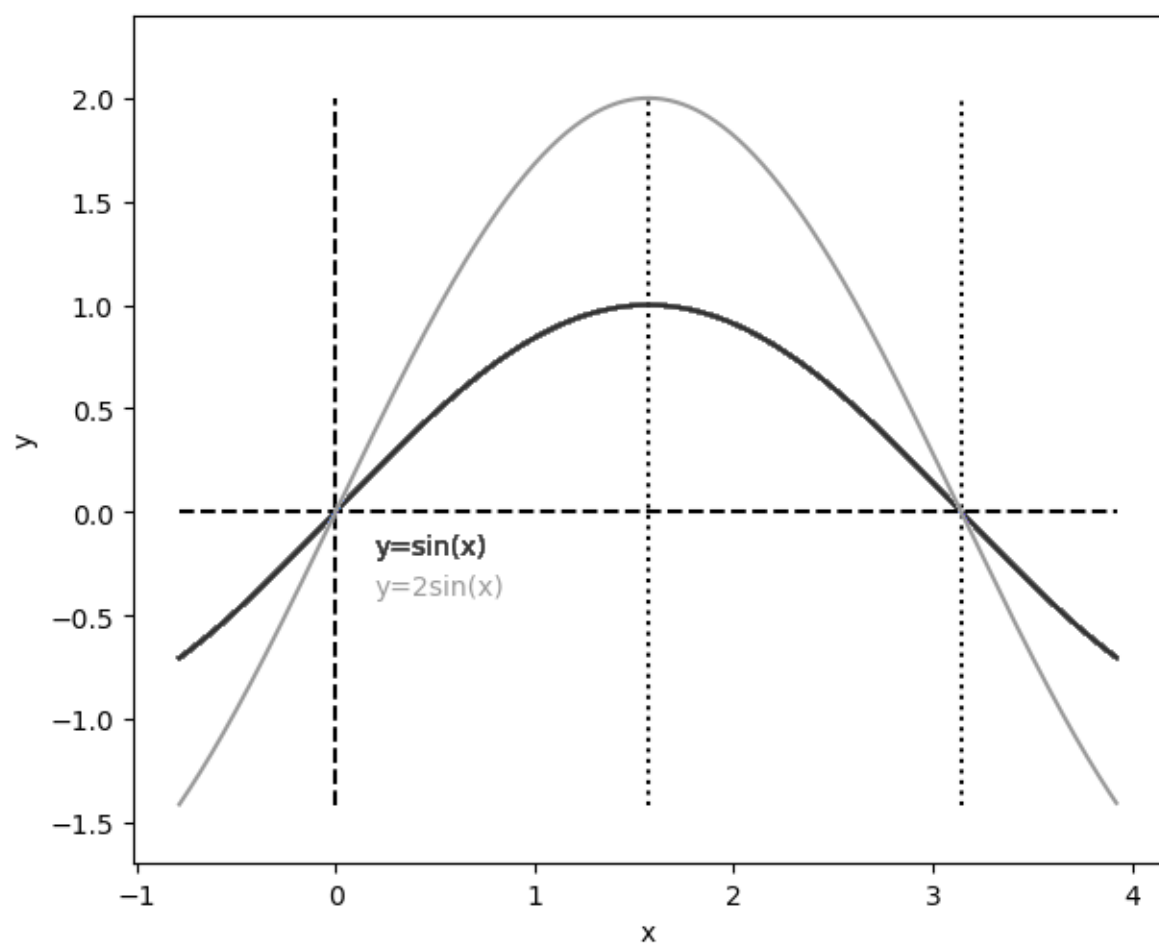
c) Calculate a_1 in the series $a_3 = 2$ $a_4 = -3$ $a_5 = -8$

Answers

Question 1

a) and b)

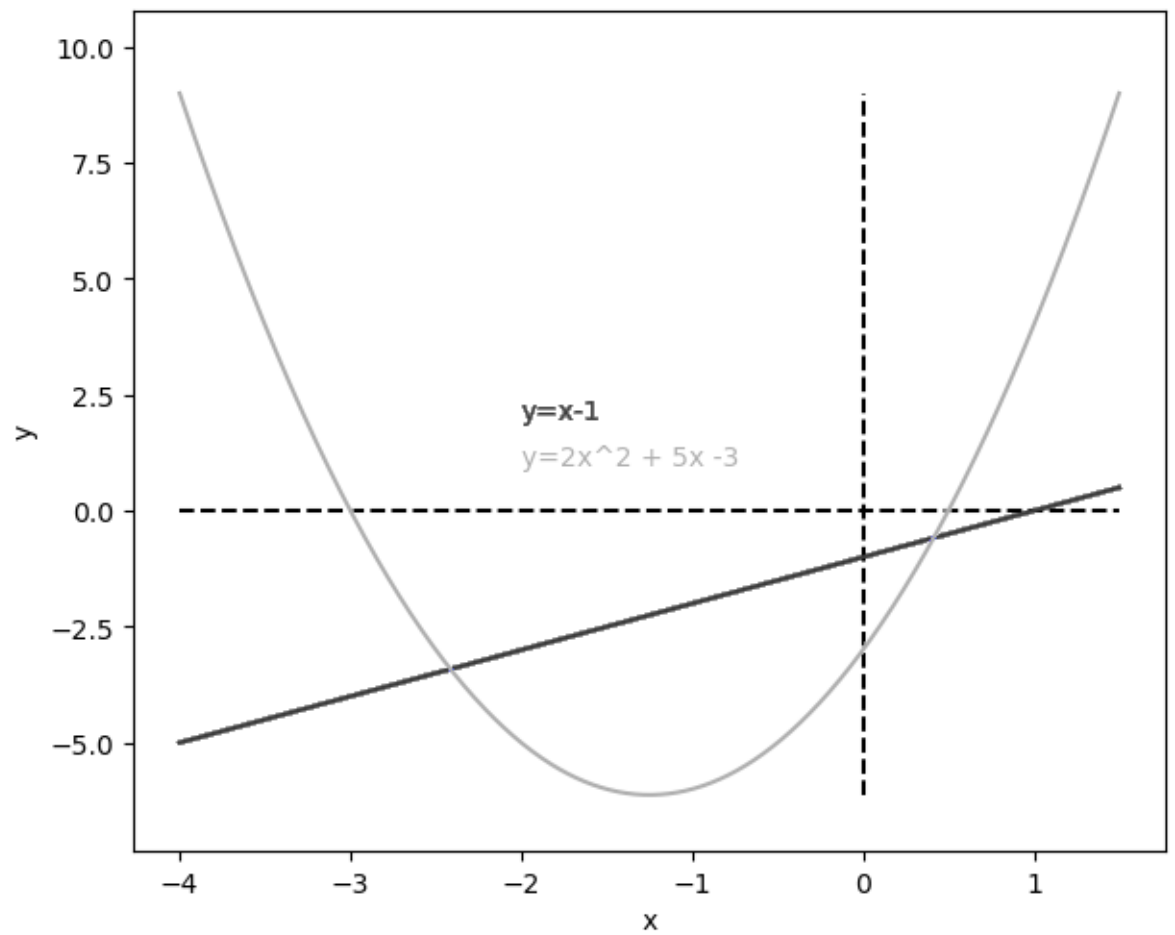
x	$\sin(x)$	$2\sin(x)$
0	0	0
$\pi/2$	1	2
π	0	0



- c) $y = 0$
d) $y = -5$

Question 2

- a) The polynomial can be factored as $(x - 1)(2x^2 + 5x - 3)$
b) and c) The polynomial can further be factored as $(x - 1)(x + 3)(2x - 1)$

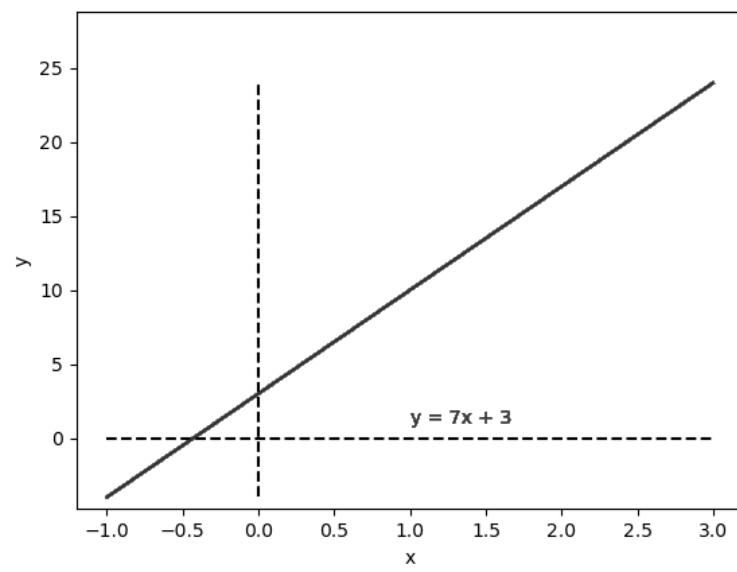


Question 3

a)

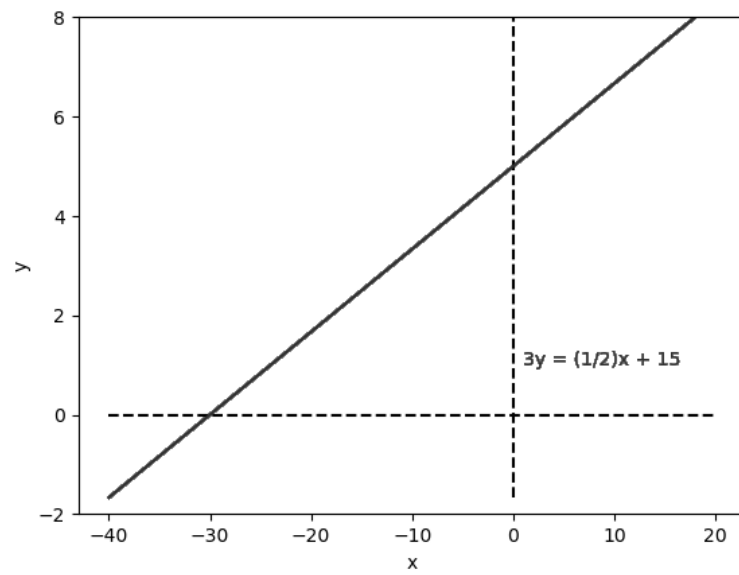
x	y
0	3
$-3/7$	0
1	10

b)



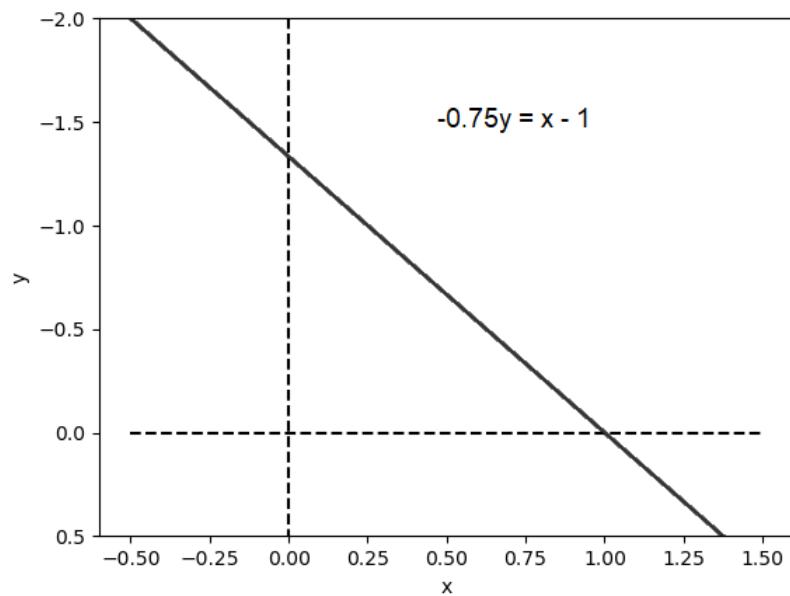
c)

x	y
0	5
$-5/6$	0
1	$31/6$



d)

x	y
0	$\frac{4}{3}$
1	0
2	$-\frac{4}{3}$



Question 4 a) $\theta = 1.23$ or 70.5°

b) $\theta = \pi/4$ or 45°

c) $\theta = 0.675$ or 38.7°

Question 5

a) $x = -3/4$

b) $x = -33/16$

Question 6

a) His interest from the bank each year is 200.6 million, meaning he gets almost 20 times more just from not spending his wealth.

b) 3.7 years of Food Banks Canada operation could be funded this way. Remember to vote!

Question 7

a) $a_3 = 3$

b) sum = 55

c) $a_1 = 12$