

Problem Set – Quadratic Skill Check (part 1)

Factor the quadratic using the method of your choice

1) $y = x^2 - 22x + 120$

$y = (x-10)(x-12)$

2) $y = 5x^2 + 3x - 2$

$y = (5x-2)(x+1)$

3) $y = 2x^2 + 7x + 1$

PRIME

4) $y = 9x^2 - 12x + 4$

$y = (3x-2)^2$

5) $y = 100x^2 - 1$

$y = (10x+1)(10x-1)$

6) $y = 6x^2 + 26x + 28$

$y = 2(x+2)(3x+7)$

Identify the vertex. Classify as a maximum or minimum.

7) $y = 2x^2 - 4x + 3$

$(1, 1)$

MIN.

8) $y = -3(x+4)^2 - 9$

$(-4, -9)$

MAX

9) $y = 2x^2 - 2x - 24$

$(\frac{1}{2}, -\frac{49}{2})$

MIN

Identify the following characteristics: shape/direction, line of symmetry, and x/y-intercepts

10) $y = 3x^2 - 17x + 6$

SHAPE: \curvearrowright

LOS: $x = \frac{17}{6}$

Y-INT: $(0, 6)$

X-INT: OMIT

11) $y = (x+1)^2 - 4$

SHAPE: \curvearrowright

LOS: $x = -1$

Y-INT: $(0, -3)$

X-INT: $(-2, 0)$ & $(0, 0)$

12) $y = -2x^2 - 2x + 40$

SHAPE: \curvearrowleft

LOS: $x = -\frac{1}{2}$

Y-INT: 40

X-INT: OMIT

Graph the function, then state the domain and range.

13) $y = 2x^2 - 8x + 6$

VERTEX: $(2, -2)$

DOMAIN

$(-\infty, \infty)$

RANGE

$[-2, \infty)$

14) $y = -2(x+2)^2 + 10$

VERTEX: $(-2, 10)$

DOMAIN

$(-\infty, \infty)$

RANGE

$(-\infty, 10]$

15) $y = x^2 + 4x - 21$

VERTEX: $(-2, -25)$

DOMAIN

$(-\infty, \infty)$

RANGE

$[-25, \infty)$

1. The first part of the document discusses the importance of maintaining accurate records of all transactions.

2. It is essential to ensure that all entries are supported by appropriate documentation.

3. The second part of the document outlines the various methods used to collect and analyze data.

4. These methods include both qualitative and quantitative approaches, each with its own strengths and limitations.

5. The third part of the document focuses on the ethical considerations that must be taken into account.

6. Researchers must ensure that their work is conducted in a transparent and honest manner.

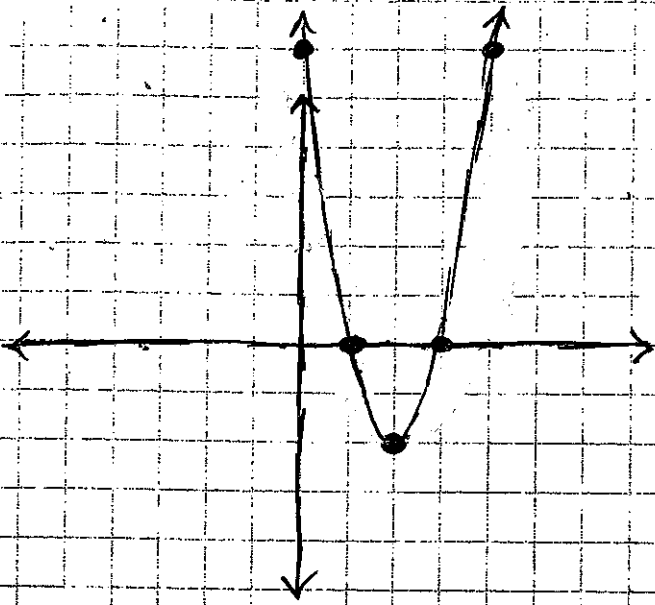
7. Finally, the document concludes by emphasizing the need for ongoing research and innovation in the field.

8. This is particularly true in light of the rapid pace of technological change and the increasing complexity of the data being analyzed.

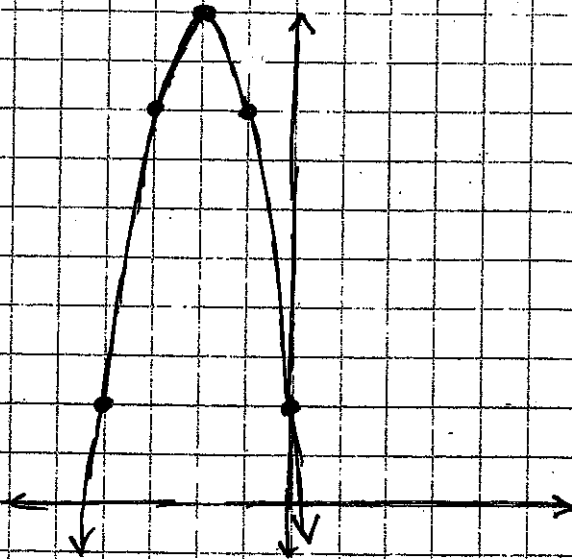
9. By staying current and embracing new tools and techniques, researchers can continue to advance our understanding of the world around us.

10. In summary, this document provides a comprehensive overview of the key issues and challenges in the field of data analysis and research.

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