

College Algebra Math 1050

Sample Midterm Exam-3 Rubric

1. $\pm\frac{1}{2}, \pm 1, \pm\frac{3}{2}, \pm 3$ (3 pts) all or nothing
2. $x = -\frac{1}{2}$ (3 pts) all or nothing
3. $x = -2i, x = 2i$ (3 pts) all or nothing
4. -3 (3 pts) all or nothing
5. $(f + g)(1) = 6.5$ (3 pts) all or nothing
6. $x = -2, x = 2$ (3 pts) all or nothing
7. $[-4, 4]$ (3 pts) all or nothing
8. $D(f + g) = [-2, 4]$ (4 pts) all or nothing,
9. $\frac{\frac{1}{2(x+h)+3} - \frac{1}{2x+3}}{h}$ (4 pts) all or nothing
10. (b) $\frac{(x^2 + 2xh + h^2 + 2x + 2h - 3) - (x^2 + 2x - 3)}{h}$ (4 pts) all or nothing
11. $x \neq \frac{1}{3}$ (2 pts) all or nothing
any correct form of the answer is acceptable
12. $(-3, 0), (2, 0)$ *answer must be written as an ordered pair* (2 pts) all or nothing
13. $(0, 6)$ *answer must be written as an ordered pair* (1 pt) all or nothing
14. $x = -3, x = 4$ *answer must be written as an equation* (2 pts) all or nothing
15. $y = 0$ *answer must be written as an equation* (2 pts) all or nothing
16. (a) $f(1) = 1$ (1 pt) all or nothing
16. (b) $f(-1) = 0$ (1 pt) all or nothing
16. (c) $f(2) = 3$ (1 pt) all or nothing
17. $(2, 0)$ (3 pts) all or nothing
18. 25 ft (*unit not necessary*) (4 pts) all or nothing.

19. (c) $2x - 3 - \frac{5}{x} \geq 0$ (3 pts) all or nothing

20. $\left(-4, -\frac{2}{3}\right] \cup (2, \infty)$ (3 pts) all or nothing

21. (b) $|x + 2| = 6$ (4 pts) all or nothing

22. $\left(\frac{1}{2}, 1\right) \cup \left(\frac{4}{3}, \infty\right)$

(8 pts) For correct answer with supporting work. All brackets must be correct.

If the answer is NOT correct:

(2 pts) For choosing the correct denominator to simplify

(3 pts) For correct expression compared to zero

OR

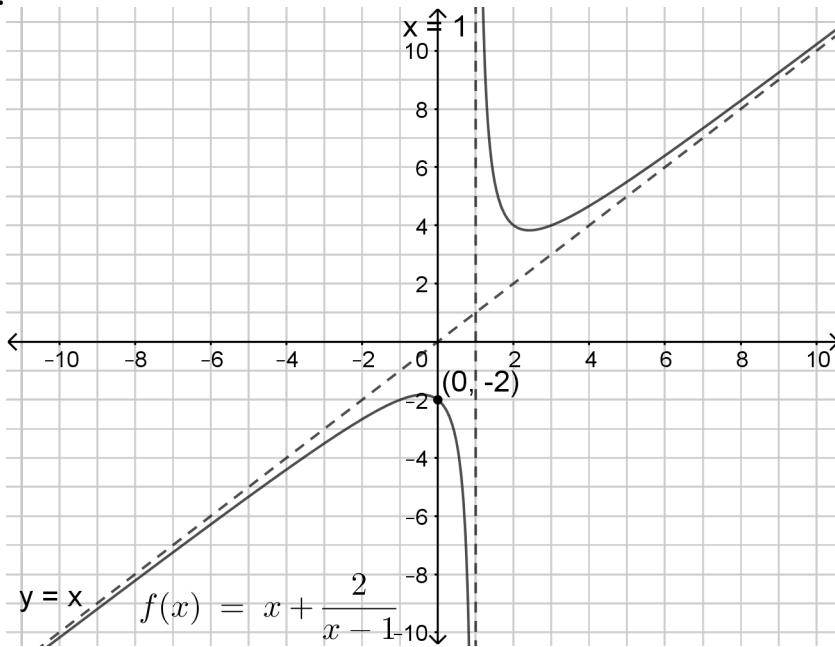
(3 pts) For listing the correct restrictions on the domain

(2 pts) For correct expression compared to zero

23. $x = -1, x = 9$

(5 pts) For correct answer with supporting work. All or nothing.

24.



(9 pts) If the graph is sketched perfectly

If the graph is NOT sketched correctly:

(3 pts) For all of the following:

- Graph is sketched over the entirety of the domain
- Correct number of vertical asymptotes are present on the graph
- Correct type of non-vertical asymptote is present on the graph
- Graph clearly demonstrates knowledge of asymptotic behavior

THEN

(2 pts) For all of the following:

- Correct x and y intercepts are present on the graph
- No extraneous intercepts are present on the graph

25. (a) 343.8 feet

(2 pts) For either:

giving the correct numerical answer with supporting work

OR

an explanation that demonstrates full understanding of the procedure for finding the answer by substituting $v = 55$ into the equation

25. (b) 43.8 mph

(6 pts) For either:

giving the correct numerical answer with supporting work

OR

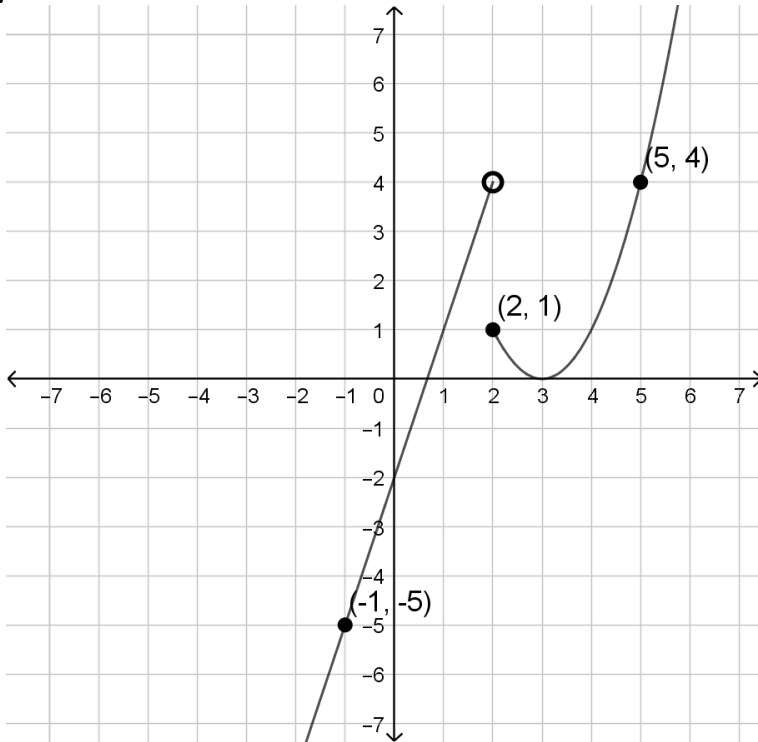
an explanation that demonstrates full understanding of the procedure for finding the answer by substituting $d = 230$ and solving for d

If the answer is NOT correct:

(4 pts) For correctly substituting values into the quadratic equation:

$$v = \frac{-1.3 \pm \sqrt{(1.3)^2 - 4(0.09)(-230)}}{2(0.09)}$$

26.



(8 pts) If the graph is sketched perfectly

If the graph is NOT sketched correctly:

(4 pts) Transition is correct

THEN

(2 pts) If both pieces of the graph are correct types, location of pieces may be incorrect.