

Middleton 1/10/04

Worked Out Solutions to Algebra I Team Questions

January Regional

1. 3 A, D, & G are true.

2. 110 $x = -10$ & $y = 11$

3. 2 A & E are true.

4. $\frac{39}{76}$ The expression simplifies to $3x^2 - 13x - 76$. $a = 3$, $b = -13$, & $c = -76$

5. 24 $3 \cdot 4 + 3 \cdot x - 4 \cdot x = 0$ $x = 12$ $3 \cdot y + 3 \cdot 4 - y \cdot 4 = 0$ $y = 12$

6. $\frac{1}{15}$ $u = 8$ & $v = 120$

7. $\frac{29}{4} = 7.25 = 7\frac{1}{4}$ (Any of the 3 forms is acceptable.) $a(3) - 4(5) = 7$ $a = 9$ $y = \frac{9}{4}x - \frac{7}{4}$ $b = \frac{9}{4}$

8. 4 Add the second equation to the first equation. $x^2 = 2$ & $y = 0$ $x^4 - y^4 = 2^2 - 0 = 4$

9. $\frac{15}{4} = 3.75 = 3\frac{3}{4}$ (Any of the 3 forms is acceptable.) $\frac{3+x}{30+x} = .2$

10. $\frac{6000}{11} = 545\frac{5}{11} = 545.\overline{45}$ (Any of the 3 forms is acceptable.)

$$d = rt \rightarrow t = \frac{d}{r} \quad \frac{d}{50} + \frac{d}{60} = 10 \rightarrow 6d + 5d = 3000 \quad d = \frac{3000}{11} \quad 2d = \frac{6000}{11}$$

11. -36 $2^{2m} = 2^{24} \rightarrow m = 12$ $2^{-2n} = 2^6 \rightarrow n = -3$

12. $\frac{8}{75}$ $d = \frac{3b}{2}$ $b = \frac{4c}{15}$ $a = \frac{8c}{75}$

13. 49 $(x+2y)^2 = x^2 + 4xy + 4y^2 = (x^2 + 4y^2) + 2(2xy) = 25 + 2 \cdot 12$

14. 1 $\frac{3^{6x} \cdot 3^{6x}}{3^{12x}} = \frac{3^{12x}}{3^{12x}}$

15. 8 $A = 3$, $B = 1$, & $C = 4$

Middleton 4/10/04

Algebra I January Regional Answer Key

Individual
Answers

1. C
2. A
3. E
4. C
5. C
6. A
7. D
8. D
9. B
10. E
11. D
12. C
13. C
14. C
15. A
16. B
17. C
18. D
19. A
20. B
21. B
22. C
23. A
24. B
25. B
26. D
27. C
28. B
29. C
30. B

Team Answers

1. 3
2. 110
3. 2
4. $\frac{39}{76}$
5. 24
6. $\frac{1}{15}$
7. $\frac{29}{4} = 7.25 = 7\frac{1}{4}$
8. 4
9. $\frac{15}{4} = 3.75 = 3\frac{3}{4}$
10. $\frac{6000}{11} = 545.\overline{45} = 545\frac{5}{11}$
11. -36
12. $\frac{8}{75}$
13. 49
14. 1
15. 8