

MAC1105 Exam 2 Review

1. False
2. Note: These should be evaluated **in the real number system**, if possible.
a) 9 b) not possible c) $\frac{1}{8}$ d) not possible
3. $\frac{16x^5}{9y^{10/3}}$
4. a) $\frac{\sqrt{21}}{7}$ b) $\frac{5\sqrt[4]{2}}{2}$ c) $\frac{2\sqrt{6}-\sqrt{3}}{7}$
5. a) $-2x^2y^5\sqrt[3]{2x}$ b) $\frac{2y\sqrt[4]{2}}{x^2}$ c) $(9x-5)\sqrt{2x}$
6. $x^{1/6}$
7. a) $-12+18i$ b) $16i$ c) $5i$
8. a) $\{-5\}$
b) $\left\{\frac{-7-\sqrt{2}}{3}, \frac{-7+\sqrt{2}}{3}\right\}$
c) $\{-8\}$
d) $\{\frac{1}{2}, 1\}$
e) $\{-1, 16\}$
9. $x \neq \{0, 3\}$; no solution
10. a) $\{-15, 1\}$ b) $\{1-\sqrt{6}, 1+\sqrt{6}\}$
11. a) two nonreal solutions; $\left\{\frac{1}{2} + \frac{\sqrt{3}}{6}i, \frac{1}{2} - \frac{\sqrt{3}}{6}i\right\}$ b) two real solutions; $\{-\frac{2}{3}, \frac{1}{2}\}$
c) two nonreal solutions $\left\{-\frac{\sqrt{14}}{2}i, \frac{\sqrt{14}}{2}i\right\}$
12. a) $\{-2, -\frac{1}{2}, 2\}$ b) $\{-2, 0, \frac{1}{2}\}$
13. $\{-7, -1, 1, 7\}$
14. $\{\sqrt{3}, -\sqrt{3}, \sqrt{3}i, -\sqrt{3}i\}$
15. a) $\{4\}$ b) $\{-\frac{3}{4}\}$
16. a) $(-\frac{13}{4}, 2)$ b) $(3, 2)$ c) $(\frac{1}{3}, -\frac{1}{6})$

17. 18 feet

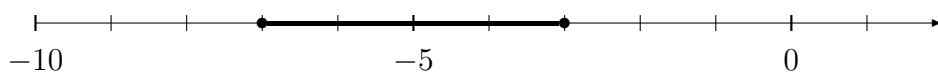
18. \$30,000 at 4%, \$30,000 at 6%

19. 40 lbs Arabica, 60 lbs Columbian

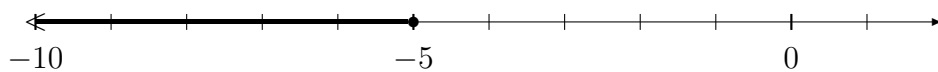
20. 42 liters of 30% solution

21. $k = -\frac{1}{2}$

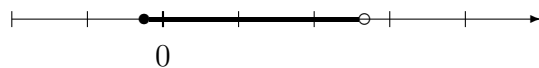
22. a) $[-7, -3]$



b) $(-\infty, -5]$

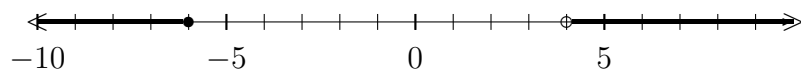


23. a) $[-\frac{1}{4}, \frac{8}{3})$



b) no solution

c) $(-\infty, -6] \cup (4, \infty)$



24. 100 miles

25. $[15, 25]$, i.e. between 15 and 25 feet