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Name Key

Math 142
Quiz 2

Show your work for full credit. (2 pts/problem unless indicated otherwise)

1. $2 - 128x^{\frac{4}{3}} = 0$

$-2 \quad -2$

$-128x^{4/3} = -2$

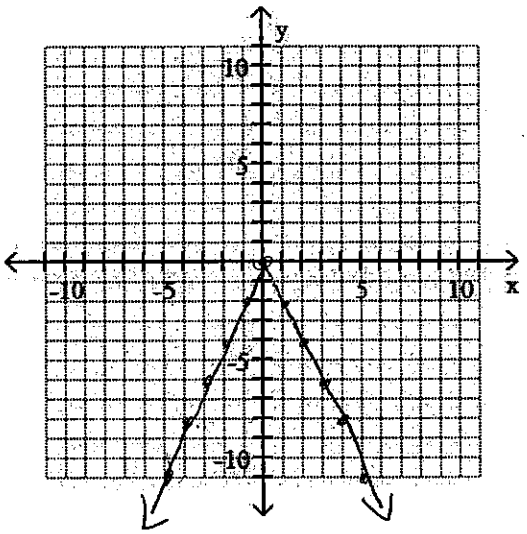
$\frac{-128}{-128} \quad \frac{-2}{-128}$

$(x^{4/3})^{3/4} = \left(\frac{1}{64}\right)^{3/4} \rightarrow x = \left(\frac{1}{2^6}\right)^{3/4} = \left(\frac{1}{2}\right)^{18/4} = 2^{-9/2}$

$(x^{4/3})^{3/4} = \left(\frac{1}{64}\right)^{3/4}$

1. $x = 2^{-9/2}$ or $\left(\frac{1}{64}\right)^{3/4} \approx 0.044$

2. Graph $y = -|-2x|$



3. Write an example of an inconsistent equation.

no solution $\emptyset$

$x + 5 = x - 1$

4. Solve $\frac{2x-1}{x^2+2x-8} + \frac{2}{x+4} = \frac{1}{2}$ (3 pts)

$(x+4)(x-2)$

$2(x+4)(x-2)$

$2(2x-1) + 4(x-2) = x^2 + 2x - 8$

$4x - 2 + 4x - 8 = x^2 + 2x - 8$

$8x - 10 = x^2 + 2x - 8$

$-8x + 10 \quad -8x + 10$

$0 = x^2 - 6x + 2$

4. $3 \pm \sqrt{7}$

$\frac{-(-6) \pm \sqrt{(-6)^2 - 4(1)(2)}}{2} = \frac{6 \pm \sqrt{36-8}}{2} = \frac{6 \pm \sqrt{28}}{2}$

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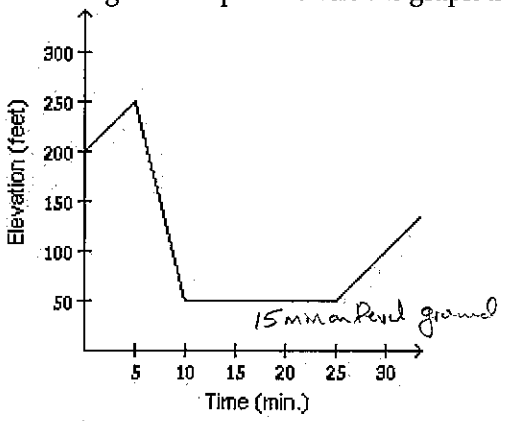
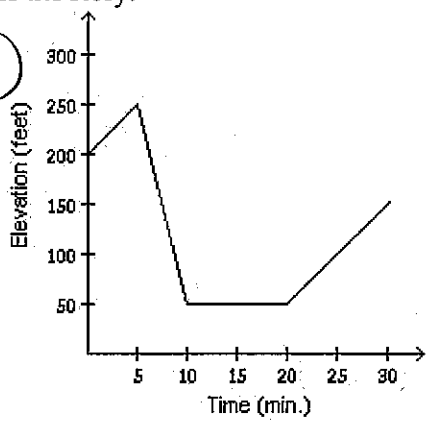
5. Gabe started out by walking 50 ft. uphill. For the next 5 minutes he walked down a steep hill to an elevation lower than his starting point. For the next 10 minutes he walked on level ground. The walk was finished walking 100 ft. uphill. Circle the graph that illustrates the story.

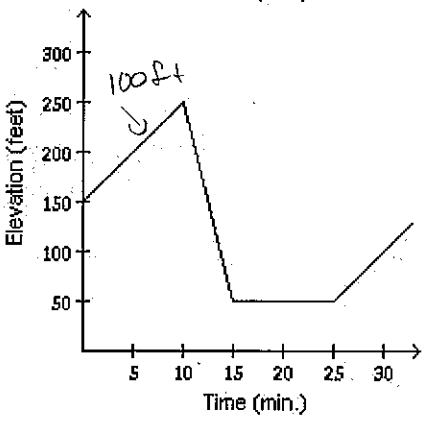
a.



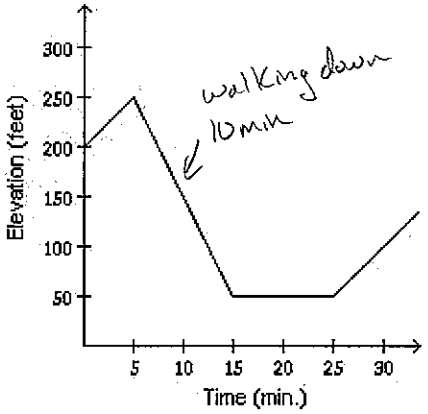
b.



c.



d.



6. Preform the indicated operations and express the result in standard form $\frac{-4+\sqrt{-20}}{8}$. (3 pts)

$$-\frac{4}{8} + \frac{\sqrt{-4}\sqrt{5}}{8} = -\frac{1}{2} + \frac{2i\sqrt{5}}{8_4} = -\frac{1}{2} + \frac{\sqrt{5}}{4}i$$

6. $-\frac{1}{2} + \frac{\sqrt{5}}{4}i$