Answers

Math 135 – Review for Test 2

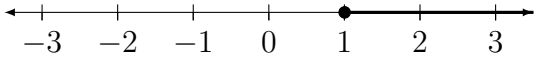
Part I: For these short-answer questions, you do not need to show any work. Place your final answer in the space provided. Each answer is worth one point.

1. Evaluate.
   (a) $-4(-8)$ = 32
   (b) $-(-3)^4$ = $-(81) = -81$

2. Evaluate. If appropriate, leave your answer in simplified fraction form.
   (a) $-\frac{5}{6} - \left(-\frac{1}{6}\right)$ = $\frac{-5}{6} + \frac{1}{6} = \frac{-4}{6} = -2/3$
   (b) $\frac{\frac{7}{4}}{-14}$ = $\frac{7}{4} \cdot \left(-\frac{1}{14}\right) = -\frac{1}{8}$

3. For the following graph, write the corresponding inequality.

   $x \geq 1$



Part II: For these questions, show your work and write your final answer in the space provided.

4. Simplify using the order of operations. If appropriate, leave your answer as a simplified fraction. Show your steps.
   (a) $-2^2 - 3 \times (-4) + 12 \div 3 \times 2$ = $-4 - (-12) + 4 \times 2 = -4 + 12 + 8 = 16$
   (b) $\left(\frac{1}{2}\right)^3 - 3 \div (-8)$ = $\frac{1}{8} - \frac{3}{-8} = \frac{1}{8} + \frac{3}{8} = \frac{4}{8} = \frac{1}{2}$

5. Remove brackets and combine like terms.

   $5x(2x - y) - 2(y - 3x^2)$ = $10x^2 - 5xy - 2y + 6x^2 = 16x^2 - 5xy - 2y$

6. Evaluate the following for $a = 2$ and $b = -3$.

   $a^3 - b$ = $2^3 - (-3) = 8 + 3 = 11$

7. Solve the following equations.
   (a) $0.2(x - 3) + 1 = 0.3(2x + 4)$ $\Rightarrow$
   (b) $9x - 7 - 8x = 3 + x - 10$

   $x - 7 = x - 7$

   $0 = 0$

   all real numbers

   $0.2x - 0.6 + 1 = 0.6x + 1.2$

   $0.2x + 0.4 = 0.6x + 1.2$ (−0.2x, −1.2)

   $-0.8 = 0.4x$ (÷0.4)

   $-2 = x$

   $x = -2$

(c) $\dfrac{x+2}{8} - \dfrac{1}{2} = \dfrac{x}{6}$ $\Rightarrow$ $24\left(\dfrac{x+2}{8} - \dfrac{1}{2}\right) = \left(\dfrac{x}{6}\right)24$

$3(x+2) - 12 = 4x$

$3x + 6 - 12 = 4x$

$3x - 6 = 4x$

$-3x \quad -3x$

$-6 = x$

$x = -6$

8. Solve for y.

$S = x^2 + 2xy$ see below

9. Solve and graph.

$4 - 3x < 6x - 5$

$+3x \quad +3x$

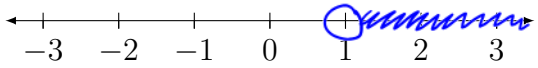
$4 < 9x - 5$

$+5 \quad +5$

$9 < 9x$

$1 < x$

$x > 1$



10. Solve and graph the following.

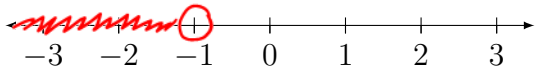
$1 - x > 2$ and $x \leq 3$

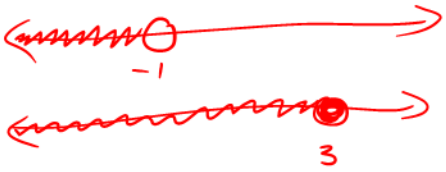
$-1 \quad -1$

$-x > 1$

$x < -1$ and $x \leq 3$

$x < -1$





} want the regions shaded in both

8) $S = x^2 + 2xy$

$-x^2 \quad -x^2$

$\dfrac{S - x^2}{2x} = \dfrac{2xy}{2x}$

$\dfrac{S - x^2}{2x} = y$

$y = \dfrac{S - x^2}{2x}$