

Solutions

1. Evaluate $5 - 3(-7 - (-4 + 1))^2$

$$= 5 - 3(-7 - (-3))^2$$

$$= 5 - 3(-7 + 3)^2$$

$$= 5 - 3(-4)^2$$

$$= 5 - 3 \cdot 16$$

$$= 5 - 48 = \boxed{-43}$$

2. $\frac{y^2 \pm \sqrt{x+7}}{2y}$ when $x = 9$ and $y = 3$

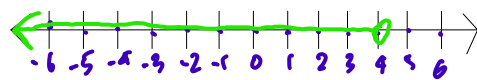
$$\frac{3^2 \pm \sqrt{9+7}}{2 \cdot 3} = \frac{9 \pm \sqrt{16}}{6} = \frac{9 \pm 4}{6} = \begin{cases} \frac{13}{6} \\ \frac{5}{6} \end{cases}$$

3. List the elements of the set $\{x \mid x \text{ is a natural number between 7 and 14}\}$.

$$= \{8, 9, 10, 11, 12, 13\}$$

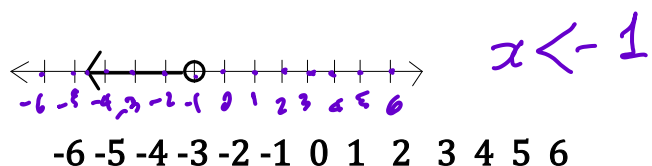
4. Evaluate: $-|-7| = -7$, because $(-7) = 7$

5. Graph the real numbers less than 4



-6 -5 -4 -3 -2 -1 0 1 2 3 4 5 6

6. Write the Inequality for a given solution



7. Simplify each. Leave your answer as an improper fraction.

a)

$$\frac{42}{12} = \frac{6 \cdot 7}{6 \cdot 2} = \boxed{\frac{7}{2}}$$

b)

$$\frac{25}{20} = \frac{5 \cdot 5}{5 \cdot 4} = \boxed{\frac{5}{4}}$$

8. Evaluate : a) $\frac{2}{7} + \frac{5}{3}$

$$\begin{aligned} a) \quad \frac{2}{7} + \frac{5}{3} &= \frac{2 \cdot 3}{7 \cdot 3} + \frac{5 \cdot 7}{3 \cdot 7} \\ &= \frac{6}{21} + \frac{35}{21} \\ &= \boxed{\frac{41}{21}} \end{aligned}$$

b) $\frac{-5}{8} - \frac{9}{2}$

$$\begin{aligned} b) \quad \frac{-5}{8} - \frac{9}{2} &= \frac{-5}{8} - \frac{9 \cdot 4}{2 \cdot 4} \\ &= \frac{-5}{8} - \frac{36}{8} \\ &= \boxed{-\frac{41}{8}} \end{aligned}$$

c) $\frac{2}{5} \cdot \frac{11}{-4}$

$$\begin{aligned} c) \quad \frac{2}{5} \cdot \frac{11}{-4} &= \frac{2 \cdot 11}{5 \cdot -4} \\ &= \frac{22}{-20} \\ &= \frac{11}{-10} \\ &= \boxed{-1.1} \end{aligned}$$

d) $\frac{2}{11} \div \frac{5}{4}$

$$\begin{aligned} d) \quad \frac{2}{11} \div \frac{5}{4} &= \frac{2}{11} \cdot \frac{4}{5} = \boxed{\frac{8}{55}} \end{aligned}$$