

Question 1:

(a)[5 points] Simplify and state your answer using only positive exponents:

$$(x^2y^{-1}z)^3 (x^{-2}y^2z)^{-3}$$

(b)[5 points] Expand and simplify:

$$\left(\frac{1}{5}\right) \left[\frac{5}{3}(x - y) - \frac{5}{2}(y - x)\right]$$

Question 2:

(a)[5 points] Simplify

$$\frac{2x^2 + 6x - 56}{2x - 8}$$

(b)[5 points] Simplify:

$$\frac{(x^2 + a)^2 - a^2}{x^2}$$

Question 3:

(a)[5 points] Factor completely:

$$h^4 - 81$$

(b)[5 points] Solve for w :

$$\frac{2w + 3}{5} = \frac{1}{3} - \frac{3}{2}w$$

Question 4:

(a)[5 points] Solve for x :

$$x = \frac{8 - x^2}{7}$$

(b)[5 points] Solve for t :

$$2t^2 + 1 = 6t$$

Question 5:

(a)[5 points] Solve for x . State your answer using interval notation.

$$-3 \leq \frac{x-3}{3} \leq 2$$

(b)[5 points] Solve for x . Graph your solution:

$$x^2 - 4x < 5$$