

Question 1: Solve for x:

$$\frac{2x + 5}{2} - \frac{3x}{x - 2} = x$$

[5]

Question 2: Solve for x:

$$\frac{2x}{x - 2} = 5 + \frac{4x^2}{x - 2}$$

[5]

Question 3: Solve for  $x$ :

$$\sqrt{4x + 5} - 6 = 2x - 11$$

[5]

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Question 4: Solve the inequality. State the answer using interval notation

$$\frac{4x + 7}{-3} \leq 2x + 5$$

[5]

**Question 5:** Solve the inequality. State the answer using interval notation

$$-4 \leq \frac{x + 1}{2} \leq 5$$

[5]

**Question 6:** Solve the inequality. State the answer using interval notation

$$2x^2 - 9x < 18$$

[5]

**Question 7:** Solve the inequality. State the answer using interval notation

$$\frac{x + 3}{x - 5} \leq 1$$

[5]

**Question 8:** A line segment has midpoint  $P(12, 6)$  and one endpoint  $Q(19, 16)$ . Determine the other endpoint.

[5]

**Question 9:** Determine whether the three points are vertices of a right triangle:  $P(-2, -5)$ ,  $Q(1, 7)$ ,  $R(3, 15)$ .

[5]

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**Question 10:** Write the following equation of a circle in center-radius form  $(x - h)^2 + (y - k)^2 = r^2$  and state the center and radius:

$$x^2 + y^2 - 12x + 10y + 25 = 0$$

[5]