

NAME: \_\_\_\_\_

*P.I. G.G.40: Investigate, justify, and apply theorems about trapezoids (including isosceles trapezoids) involving their angles, sides, medians, and diagonals*

1. In isosceles trapezoid  $JKLM$ , leg  $JK = 3x + 6$ , base  $KL = 9x - 3$ , and leg  $LM = 7x - 9$ . Find the value of  $x$ .

[A]  $\frac{3}{2}$     [B]  $\frac{15}{4}$     [C]  $\frac{3}{4}$     [D]  $-3$

2. In isosceles trapezoid  $JKLM$ , leg  $JK = 5x + 4$ , base  $KL = 9x + 8$ , and leg  $LM = 2x + 6$ . Find the value of  $x$ .

[A]  $-1$     [B]  $-\frac{2}{7}$     [C]  $\frac{10}{3}$     [D]  $\frac{2}{3}$

3. In isosceles trapezoid  $JKLM$ , leg  $JK = 7x - 9$ , base  $KL = 5x + 3$ , and leg  $LM = 2x + 2$ . Find the value of  $x$ .

[A]  $\frac{11}{5}$     [B]  $-\frac{7}{5}$     [C]  $-\frac{1}{3}$     [D]  $6$

4. In isosceles trapezoid  $JKLM$ , leg  $JK = 5x - 10$ , base  $KL = 6x + 2$ , and leg  $LM = 2x + 8$ . Find the value of  $x$ .

[A]  $-\frac{2}{3}$     [B]  $\frac{3}{2}$     [C]  $6$     [D]  $-12$

[1] B

[2] D

[3] A

[4] C