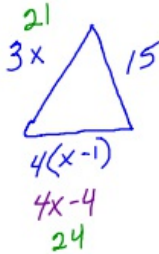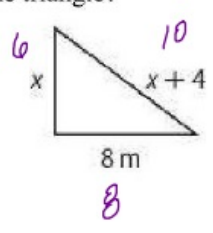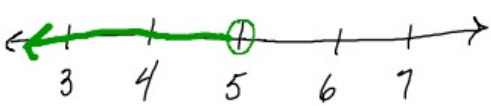Name _____ Date _____ Per. _____

M7A Chapter 8 Practice Test

1. What value of m makes the equation $\frac{1}{15} = \frac{3}{5}m$ true?

$\dfrac{\frac{1}{15}}{\frac{3}{5}} = \frac{1}{15} \cdot \frac{5}{3} = \frac{5}{45} = \frac{1}{9}$

$\left(\frac{5}{3}\right)\frac{1}{15} = \frac{3}{5}m\left(\frac{5}{3}\right)$

$\frac{3}{5} \quad \frac{3}{5}$

$\frac{1}{9} = m$

$\frac{1}{15} = \frac{3}{5}\left(\frac{1}{9}\right)$

$\frac{1}{9} = m$

$\frac{1}{15} = \frac{3}{45}$

$m = \frac{1}{9}$

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2. Solve $7x - 9 = -30$.

$+9 \qquad +9$

$\dfrac{7x}{7} = \dfrac{-21}{7}$

$x = -3$

$7(3) - 9 = -30$
$21 - 9$
$12 = -30$

$7(-3) - 9 = -30$
$-21 - 9 = -30$
$-30 = -30$

$x = -3$

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3. Which inequality is graphed on the number line shown?

$-6\,-5\,-4\,-3\,-2\,-1\ 0\ 1\ 2$

A. $x < -3$
B. $x \le -3$
C. $x \ge -3$
D. $x > -3$

C

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4. The side lengths, in centimeters, of a triangle are $3x$, 15, and $4(x-1)$. The perimeter of the triangle is 60 centimeters. What is the length of the longest side of the triangle?

21
$3x$ /\ 15
$4(x-1)$
$4x-4$
24

$3x + 15 + 4x - 4$
$7x + 11 = 60$
$-11 \quad -11$
$\dfrac{7x}{7} = \dfrac{49}{7}$
$x = 7$

21
15
24
60

$4(x-1)$ IS THE LONGEST SIDE, IT IS **24cm**

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5. A computer game lets you build your own amusement park. Suppose it costs you $25,000 a day to run the park. Assume the average daily attendance is 1250 people. How much should you charge for admission if you want to make a profit of at least $30,000 for a 30-day month? Write an inequality to represent this situation, and solve.

$x = $ ADMISSION COST

Hints:
What is the average profit you want to make each day?

PROFIT $\ge$ $1000 PER DAY

$\dfrac{25,000 + 1,000}{1250} = \dfrac{26,000}{1,250} = \$20.80$

$x \ge 20.80$

YOU MUST CHARGE AT LEAST $20.80 EACH DAY

MDW 2023

6. Taylor attached 24 ribbons to a jacket in $\frac{4}{5}$ hour. At this rate, how many ribbons could he attach in one hour?

$$\frac{24r}{24} = \frac{48\,min}{24}$$

$$(30)r = 2\,min\,(30)$$

30 RIBBONS PER HOUR

$$\frac{4}{5} = 0.8$$

$$30(0.8) = 24$$

$$\frac{24}{4} = 6$$

$$6(5) = 30$$

30 RIBBONS PER HOUR

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7. The perimeter of the triangle shown is 24 meters. What is the length of the shortest side of the triangle?

6, 10, x, x + 4, 8 m, 8

$$x + x + 4 + 8$$

$$2x + 12 = 24$$

$$-12 \quad -12$$

$$\frac{2x}{2} = \frac{12}{2}$$

$$x = 6$$

THE X SIDE IS THE SHORTEST AT 6m

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8. Solve $0.5(8x - 12) = -10$.

$$4x - 6 = -10$$

$$+6 \quad +6$$

$$\frac{4x}{4} = \frac{-4}{4}$$

$$x = -1$$

$$0.5(8(-1) - 12)$$

$$0.5(-8 - 12)$$

$$0.5(-20) = -10$$

$$-10 = -10$$

$$x = -1$$

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9. Three times the quantity $h + 4$ equals four times the quantity $h - 1$. What value of h makes this sentence true?

$$3(h+4) = 4(h-1)$$

$$3h + 12 = 4h - 4$$

$$+4 \qquad +4$$

$$3h + 16 = 4h$$

$$3h + 16 = 4h$$

$$-3h \qquad -3h$$

$$16 = h$$

$$3(16+4) = 4(16-1)$$

$$3(20) = 4(15)$$

$$60 = 60$$

$$h = 16$$

---

10. Solve and graph $18 > -12 + 6m$

$$+12 \quad +12$$

$$\frac{30}{6} > \frac{6m}{6}$$

$$5 > m$$

$$m < 5$$

$$18 > -12 + 6(4)$$

$$18 > -12 + 24$$

$$18 > 12$$

$$5 > m$$
OR
$$m < 5$$

$$m + 5 = 11$$

$$m = 6$$

$$m + x + 5 = 11$$

$$m = 11 - x - 5$$

$$m = 6 - x$$