Day 12 HW: Cumulative Review after Unit 4 Test

For exercises 1-4, A is between B and C and AC = 5.

1) If AB = 4, what is BC?

2) If BC = 6, what is AB?

3) If A is the midpoint of $\overline{BC}$, what is AB?

4) If AB = 2(AC), what is AB?

For exercises 5-7, simplify completely.

5) $\dfrac{4ab^2c^{-1}}{(ab^{-2}c^3)^4}$

6) $\sqrt[3]{12x^4} \bullet \sqrt[3]{180x}$

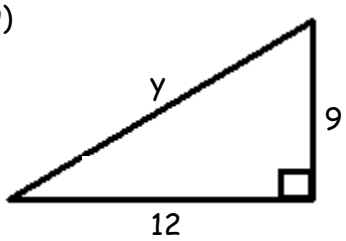
7) $\sqrt[3]{135x^4} + x\sqrt[3]{40x}$

8) Which point lies in the solution set for the system: $2y - x \geq -6$
$2y - 3x < -6$

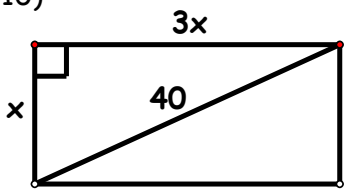
A. (-4, -1) B. (3, 1) C. (0, -3) D. (4, 3)

Find the value of the variables. (Hint: Pythagorean Theorem! ☺)

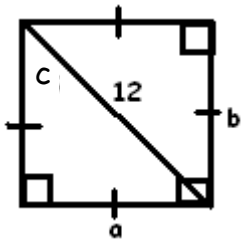
9)



10)



11)



Find the intersection of the two lines.

12) x + 2y = 5
4x – 2y = 10

13) 5x – 2y = -23
9x + 3y = -15

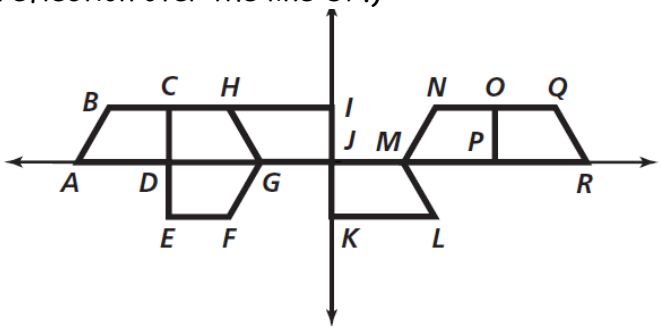
State whether each mapping is a reflection, rotation, translation, or glide reflection. Specifically describe each transformation. (Example: ⏢MNOP -> ⏢RQOP is a reflection over the line OP.)

14. $\square ABCD \rightarrow \square GHCD$

15. $\square HGJI \rightarrow \square LMJK$

16. $\square GFED \rightarrow \square RQOP$

17. $\square MNOP \rightarrow \square ABCD$



Solve using the appropriate method. Give exact answer(s).

18) $-36 = 3m^2 - 31m$

19) $2x^2 - 6x - 2 = 0$

20) Solve for x: $4^{5x} = 48$

A. $x = 3\log 12$ B. $\log 48 - 5\log 4$ C. $x = \frac{\log 48}{5\log 4}$ D. $x = \frac{\log 12}{\log 4}$

21) Which is the inverse of the function $f(x) = x - 5$?

A. $f^{-1}(x) = \frac{1}{x+5}$ B. $f^{-1}(x) = x + 5$ C. $f^{-1}(x) = 5 - x$ D. $f^{-1}(x) = \frac{1}{x-5}$

22) Find the discriminant to determine the number and nature of the roots. $2x^2 + 3x = 5$

A. Two real rational roots B. One real rational root

C. Two imaginary roots D. Two real irrational roots

23) In which direction is the graph of $f(x) = \frac{3}{x+b}$ translated when b increases?

A. down B. up C. right D. left

24) The bacteria in a petri dish double every 4 hours. Initially there were 65 bacteria in the sample.

a) Write an equation to represent this scenario.

b) How many bacteria will there be after 24 hours?

25) Maria purchased a commercial property four years ago for $125,000. The property is now worth $192,000. Assuming a steady annual percentage growth rate, what is the approximate yearly rate of appreciation?

A. 1.0% B. 11.3% C. 13.4% D. 34.9%