**Review problems for Unit 1 test**

**1a.**

Simplify the following expression: 2(x+6) – 4(x-3)

**1b.**

Simplify the following expression: 3(x+4) – 2(x-8)

**2a.**

Solve the following equation for q: 3.2q – 0.75 = q + 2.33

**2b.**

Solve the following equation for q: 5.1q – 0.35 = q + 3.83

**3a.**

What is the hypotenuse of a right triangle with legs of 6inches and 8 inches?

**3b.**

What is the hypotenuse of a right triangle with legs of 8inches and 15 inches?

**4a**

Rewrite $x^{\frac{5}{4}}$ in two different ways.

**4b**

Rewrite $x^{\frac{7}{11}}$ in two different ways.

**5a**

What is the distance between the points (-2,5) and (4, -3)?

**5b**

What is the distance between the points (8,-5) and (-4, 7)?

**6a**

What is the volume of a cone with diameter of 12 cm and height of 15 cm?

**6b**

What is the volume of a cone with diameter of 22 cm and height of 8 cm?

**7a**

What is the value of $\sqrt[3]{216^{2}}$?

**7b**

What is the value of $\sqrt[3]{125^{2}}$?

**8a**

Mark has 5 more marbles than his friend. If they have no more than 95 marbles together, what is the maximum number of marbles Mark has?

**8b**

Mark has 10 more marbles than his friend. If they have no more than 120 marbles together, what is the maximum number of marbles Mark has?

**9a**

In a triangle, the sides have lengths of 9, 16, and 21. Is this a right triangle? Justify your answer.

**9b**

In a triangle, the sides have lengths of 10, 18, and 26. Is this a right triangle? Justify your answer.

**10a**

Bob has 5 more than twice as many baseball cards as James. Together, they have 95 cards. How many does each have?

**10b**

Bob has 10 more than twice as many baseball cards as James. Together, they have 150 cards. How many does each have?

**11a**

The volume of a sphere is 2144.66 cubic feet. What is the radius of this sphere?

**11b**

The volume of a sphere is 523.6 cubic feet. What is the radius of this sphere?