Algebra 1 — Problem Set 6 — Answers

1. Round 825 038 219 to the nearest ten million. 830 000 000

2. Consider the numbers 34 567, 505 050, 1296, 2004, 27 082.

   (a) Find all numbers from the list that are divisible by 4. 1296, 2004

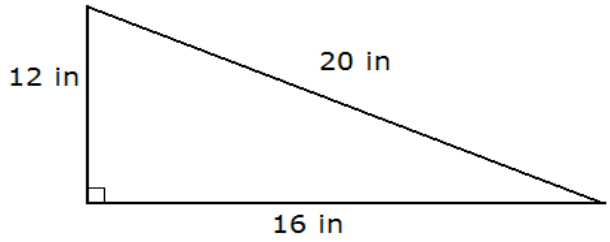
   (b) Find all numbers from the list that are divisible by 3. 505 050, 1296, 2004

   (c) Use parts a) and b) to find all numbers from the list that are divisible by 12. 1296, 2004

3. Find the average of 2, -7, 18, -42, 0, 4, and -3. -4

4. List all factors of 100. 1, 2, 4, 5, 10, 20, 25, 50, 100

5. Consider the right triangle shown on the picture below.



   (a) Compute the perimeter of the triangle. Include units in your answer. $P = 24$ in

   (b) Compute the area of the triangle. Include units in your answer. $A = 24$ in^2

6. Find the average of the prime numbers between 6 and 18. 12

7. Is 101 a prime number? yes

8. Perform the following operations. Show all steps.

   (a) $7 - 2^3 + (-5) + (-5)(-2) + (-5)(-2)(-2) =$ -16

   (b) $-2 + (-5)^2 - (-2)^5 + (-2)(-4)^2\left((-3)^2 - (-2)^2\right) =$ -105

   (c) $\dfrac{(-2)^3}{1-(4-(7-3^2 \div ((-3)^2 - 2\cdot 3)))} =$ -8

   (d) $\dfrac{-6^2 + 3(4-|6|) \div 6 + (-2)^2 - 11}{4-(-3)+12 \div 4 \cdot 5} =$ -2

9. Evaluate each of the following expressions if $a = -2$ and $b = -12$.

   (a) $2a - 3b + |a - b| =$ 42

   (b) $\dfrac{a^2\left(a^3\right)^2}{(2a)^3} =$ -4

   (c) $a^2 - 2ab + b^2 =$ 100

   (d) $(20a - 3b + 2)(a^3 + 10a - a^2b) =$ -40

   (e) $|2b + a| + a =$ 24

10. We split \$ 3000 into six equal shares and take five shares. How much money is that? \$ 2500