Math 70
Exam 1 Answers

1. (a) $\frac{4}{5} + 4\frac{7}{10} = \frac{4}{5} + \frac{47}{10} = \frac{8}{10} + \frac{47}{10} = \frac{55}{10} = \boxed{\frac{11}{2} \text{ or } 5\frac{1}{2}}$

   (b) $11 + (-3) = \boxed{8}$

   (c) $-13 - 7 = \boxed{-20}$

   (d) $-\frac{5}{6} + \frac{1}{4} = -\frac{10}{12} + \frac{3}{12} = \boxed{-\frac{7}{12}}$

   (e) $-8 - (-3) = -8 + 3 = \boxed{-5}$

   (f) $1.5 - (-12.34) = 1.5 + 12.34 = \boxed{13.84}$

2. $\frac{9\ miles}{1} \times \frac{1.61\ km}{1\ mile} = \boxed{14.49 \text{ km}}$

3. $\frac{12500\ mm}{1} \times \frac{1\ m}{1000\ mm} = \frac{12500}{1000} \text{ m} = \boxed{12.5 \text{ m}}$

4. (a) $\frac{1}{2} \div 2\frac{3}{4} = \frac{1}{2} \div \frac{11}{4} = \frac{1}{2} \times \frac{4}{11} = \frac{4}{22} = \boxed{\frac{2}{11}}$

   (b) $\frac{5}{3}\left(\frac{9}{20}\right)\left(\frac{1}{2}\right) = \frac{45}{120} = \boxed{\frac{3}{8}}$

   (c) $\frac{18}{\frac{6}{7}} = 18 \div \frac{6}{7} = 18 \times \frac{7}{6} = \frac{126}{6} = \boxed{21}$

   (d) $(3.1)(1.2) = \boxed{3.72}$

   (e) $7.26 \div 0.3$ This is the same as $72.6 \div 3 = \boxed{24.2}$

   (f) Here are two ways to approach this:

   - $\frac{2}{3} - 0.4 = \frac{2}{3} - \frac{4}{10} = \frac{20}{30} - \frac{12}{30} = \frac{8}{30} = \boxed{\frac{4}{15}}$
   - $\frac{2}{3} - 0.4 = 0.6\overline{6} - 0.4 = \boxed{0.2\overline{6}}$

5. Here are two ways to approach this:

   - Discount = 70% of 30 $= 0.7(30) = 21 \quad \Rightarrow \quad$ Sale Price $= 30 - 21 = \boxed{\$9}$

- Sale Price = 30% of 30 = 0.3(30) = $\boxed{\$9}$

6. Here are two ways to approach this:

   - $\frac{Number\ of\ non-chocolate\ chip\ cookies}{Total\ cookies} = \frac{75-42}{75} = \frac{33}{75} = \frac{11}{25}$

     Using either division to get that $\frac{11}{25} = 0.44$ or the fact that $\frac{11}{25} = \frac{44}{100}$, we get that $\boxed{44\%}$ of the cookies are not chocolate chip.

   - If you calculate $\frac{Number\ of\ chocolate\ chip\ cookies}{Total\ cookies} = \frac{42}{75} = \frac{14}{25} = 0.56$ or $\frac{56}{100}$, you get that 56% of the cookies are chocolate chip.

     That means that 100% - 56% = $\boxed{44\%}$ are not chocolate chip.

7. If one batch of cookies requires $5\frac{1}{4}$ cups of flour, how much flour is needed for two-thirds of a batch?

   Flour for two-thirds of a batch = $\frac{2}{3} \times 5\frac{1}{4} = \frac{2}{3} \times \frac{21}{4} = \frac{42}{12} = \boxed{\frac{7}{2} \text{ or } 3\frac{1}{2} \text{ cups}}$