Numerical Skills/Pre-Algebra Practice Placement Test

1. Simplify. $27 + (-11) + 24 - (-13) + 9$

2. Compute. $\frac{4}{7} + \frac{5}{6}$

3. Divide. $\frac{7}{8} \div \frac{5}{16}$

4. Simplify. $\frac{3}{4} + \frac{4}{9} \cdot \frac{-1}{2} - \frac{1}{4}$

5. Jon is making bird houses for a yard sale. Each bird house costs $5.25 to make. If he sells the bird houses for $7.00 each, how many will he have to sell to make a profit of $35.00?

6. What is the average (arithmetic mean) of 12, 8, 5, 6, 6, 4, and 3?

7. Simplify. $28 - 2 \cdot 7 + 5$

8. Simplify. $\frac{17 - 8}{2^5 - 3^2}$

9. 24 is 75% of what number?

10. A T-shirt has been marked down 25% and now sells for $15.60. What was the original selling price?

11. Chris charged $500 worth of goods on his credit card. On his first bill, he was not charged any interest, and he made a payment of $120. He then charged another $60 worth of goods. On his second bill, a month later, he was charged 4% interest on his entire unpaid balance. How much interest was Chris charged on his second bill?

12. If 3 pounds of apples cost $2.46, what is the cost of 15 pounds?

13. What is the largest prime factor of 210?

14. What is the least common multiple of 15, 18, and 60?

15. How many yards of material remain from a 36-yard length after two pieces, each $4\frac{1}{4}$

yards

long, and four pieces, each $3\frac{1}{2}$ yards long, are removed?

16. What is the average (arithmetic mean) of 9, 13, 17, 12, and 14?

17. What is the meaning of 4^6?

18. Multiply. 1.4×6.8

19. What is 35% of 80?

20. Six pieces of wire are cut from a length of wire that is 75 feet long. Two pieces are each $9\frac{1}{3}$

feet long. Two of the pieces are $4\frac{3}{4}$ feet long each. Two of the pieces are $6\frac{1}{2}$ feet long

each. How many feet of wire is left from the original length?

Numerical Skills/Pre-Algebra Practice Placement Test
(Answers)

1. $27 + (-11) + 24 - (-13) + 9$

$= 16 + 24 - (-13) + 9$

$= 40 - (-13) + 9$

$= 53 + 9$

$= 62$

2. $\frac{4}{7} + \frac{5}{6}$

$= \frac{4}{7} \cdot \frac{6}{6} + \frac{5}{6} \cdot \frac{7}{7}$

$= \frac{24}{42} + \frac{35}{42}$

$= \frac{59}{42}$ or $1\frac{17}{42}$

3. $\frac{7}{8} \div \frac{5}{16}$

$= \frac{7}{8} \cdot \frac{16}{5}$

$= \frac{7}{1} \cdot \frac{2}{5}$

$= \frac{14}{5}$ or $2\frac{4}{5}$

4. $\frac{3}{4} + \frac{4}{9} \cdot \frac{-1}{2} - \frac{1}{4}$

$= \frac{3}{4} - \frac{2}{9} - \frac{1}{4}$

$= \frac{27}{36} - \frac{8}{36} - \frac{9}{36}$

$= \frac{10}{36}$

$= \frac{5}{18}$

5. Jon is making bird houses for a yard sale. Each bird house costs $5.25 to make. If he sells the bird houses for $7.00 each, how many will he have to sell to make a profit of $35.00?

Jon is making $1.75 profit per sale. Divide 35 by 1.75.

$\frac{35}{1.75} = \frac{3500}{175} = 20$

Therefore, Jon will have to sell 20 bird houses to make a profit of $35.00.

6. What is the average (arithmetic mean) of 12, 8, 5, 6, 6, 4, and 3?

$\frac{12 + 8 + 5 + 6 + 6 + 4 + 3}{7} = \frac{44}{7} = 6\frac{2}{7}$

7. $28 - 2 \cdot 7 + 5$

$= 28 - 14 + 5$

$= 14 + 5$

$= 19$

8. $\frac{17 - 8}{2^5 - 3^2}$

$= \frac{17 - 8}{32 - 9}$

$= \frac{9}{23}$

9. 24 is 75% of what number?

$24 = 0.75 \cdot x$

10. $15.60 is 75% of what?

$15.60 = 0.75 \cdot x$

$\frac{24}{0.75} = x$

$32 = x$

$\frac{15.60}{0.75} = x$

$20.80 = x$

11. Chris charged $500 worth of goods on his credit card. On his first bill, he was not charged any interest, and he made a payment of $120. He then charged another $60 worth of goods. On his second bill, a month later, he was charged 4% interest on his entire unpaid balance. How much interest was Chris charged on his second bill?

$500 - 120 = 380$

$380 + 60 = 440$

$440 \cdot 0.04 = 17.6$

Therefore, Chris was charged $17.60 on his second bill.

12. If 3 pounds of apples cost $2.46, what is the cost of 15 pounds?

$\frac{\$2.46}{3 \text{ pounds}} = \$0.82$ per pound

15 pounds $\times \$0.82 = \$12.30$

Therefore, the cost of 15 pounds of apples is $12.30.

13. What is the largest prime factor of 210?

$112 = 2 \cdot 3 \cdot 5 \cdot 7$ Therefore, 7 is the largest prime factor.

14. What is the least common multiple of 15, 18, and 60?

$15 = 3 \cdot 5$

$18 = 2 \cdot 3^2$

$60 = 2^2 \cdot 3 \cdot 5$

LCM $= 2^2 \cdot 3^2 \cdot 5 = 180$

15. How many yards of material remain from a 36-yard length after two pieces, each $4\frac{1}{4}$ yards long, and four pieces, each $3\frac{1}{2}$ yards long, are removed?

$36 - 2\left(4\frac{1}{4}\right) - 4\left(3\frac{1}{2}\right) = 36 - 8\frac{1}{2} - 14 = 13\frac{1}{2}$

Therefore, $13\frac{1}{2}$ yards of material remain.

16. What is the average (arithmetic mean) of 9, 13, 17, 12, and 14?

$$\frac{9+13+17+12+14}{5} = \frac{65}{5} = 13$$

17. What is the meaning of 4^6?

$$4^6 = 4 \cdot 4 \cdot 4 \cdot 4 \cdot 4 \cdot 4$$

18.
$$\begin{array}{r} 6.8 \\ \times\ 1.4 \\ \hline 272 \\ +\ 680 \\ \hline 9.52 \end{array}$$

19. What is 35% of 80?

$$x = 0.35 \cdot 80$$
$$x = 28$$

20. Six pieces of wire are cut from a length of wire that is 75 feet long. Two pieces are each $9\frac{1}{3}$ feet long. Two of the pieces are $4\frac{3}{4}$ feet long each. Two of the pieces are $6\frac{1}{2}$ feet long each. How many feet of wire is left from the original length?

$$75 - 2\left(9\frac{1}{3}\right) - 2\left(4\frac{3}{4}\right) - 2\left(6\frac{1}{2}\right) = 75 - 18\frac{2}{3} - 9\frac{1}{2} - 13 = 33\frac{5}{6}$$

Therefore, $33\frac{5}{6}$ feet of wire is left.