

Factors and Products Mid-Chapter Review

Multiple Choice:

- Identify which of the following is both a perfect square and a perfect cube.

a) 8 b) 16 c) 32 **d) 64**
- Determine the greatest common factor of 56, 20 and 228.

a) 1 **b) 4** c) 2 d) 15 960
- Determine the square root of 3969.

a) 225 b) 69 **c) 63** d) 1125

Short Answer – Simplify the Following Expressions

- Write the prime factorization of 90. $2 \cdot 3^2 \cdot 5$
- Factor the binomial $3x^2 - 18x$ $3x(x-6)$
- Expand and simplify: $(x-7)(x+1)$ $x^2 - 6x - 7$

Long Answer

- Here is a student's solution for multiplying binomials.

$$\begin{aligned} \text{Multiply: } & (2s - 4)(3s + 5) \\ \text{Solution: } & 6s^2 + 10s - 12s + 20 \\ & 6s^2 - 2s + 20 \end{aligned}$$

- Identify the error in the solution. \rightarrow
 - Write a correct solution. $6s^2 - 2s - 20$
- Factor: $m^2 - 7m + 10$. Check by expanding. $(m-5)(m-2)$
 - Paula has 18 toonies, 30 loonies and 48 quarters. She wants to group her money so that each group has the same number of each coin and there are no coins leftover. Determine the maximum number of groups she can make. 6
 - Factor: $4t^3 - 5t$ $t(4t^2 - 5)$
 - Factor: $m^2 - 9m + 14$ $(m-7)(m-2)$
 - Expand and simplify: $(2t + 1)^2$ $4t^2 + 4t + 1$

$$\begin{aligned} P & 14 \\ S & -9 \\ F & -7, -2 \end{aligned}$$