

PRACTICE Midterm – Chapter 3

d

1. What is the GCD of 56 and 88.
 a. 77 b. 616 c. 7 **(d.) 8**

d

2. What is the LCM of 10 and 22.
 a. 2 b. 55 c. 220 **(d.) 110**

d

3. Factor $15y^2 - 48y$.
 a. $3(5y^2 - 16y)$ c. $y(15y - 48)$
 b. $3y(5y - 16y)$ **(d.) $3y(5y - 16)$**

d

4. Factor $-24c^3d - 40c^2d^2 - 32cd^3$.
 a. $-8cd(3c^2 - 5cd - 4d^2)$ c. $8cd(-3c^2 + 5cd + 4d^2)$
 b. $8cd(3c^2 + 5cd + 4d^2)$ **(d.) $-8cd(3c^2 + 5cd + 4d^2)$**

c

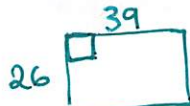
5. Which of the following can be factored?
 a. $y^2 + 3y + 12$ **(c.) $y^2 + 8y + 15$**
 b. $y^2 + 12y + 5$ d. $y^2 + 14y + 3$

a


6. Which number is missing in \square so that you could factor it as a perfect square? $64v^2 - \square vw + 81w^2$
(a.) 144 c. 72
 b. 648 d. 18

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7. You want to tile a rectangular wall with dimensions 26cm by 39cm using square tiles. What is the max dimension of tiles that you can use?


 $GCF(26, 39) = ? \Rightarrow \underline{13 \text{ cm}}$
 $26 = 2 \times 13$
 $39 = 3 \times 13$

8. You have rectangular tiles with dimensions 8cm by 12cm. You want to position them so that it creates a square. What is the smallest square that you can make? How many tiles will be needed?


 $LCM(8, 12) = ?$ **smallest square: 24cm by 24cm**
 $8 = 2^3$
 $12 = 2^2 \times 3$ } $LCM = 24$ **# tiles: 6**

9. Expand and simplify. $(12 + q)(2 - q)$ /2

$$= 24 - 12q + 2q - q^2$$

$$= -q^2 - 10q + 24$$

10. Find the mistake and correct it.

$$(11a + b)((2a - 12b + 4)$$

$$= \cancel{13}a^2 - \cancel{143}ab + 44a + \cancel{12}b^2 + 4b = 22a^2 - 130ab + 44a + 4b - 12b^2$$

$$= 13a^2 - 145ab - 13b^2 + 44a + 4b$$

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11. Factor:

$$\begin{aligned} \text{a. } 49s^2 - 64t^2 \\ = (7s + 8t)(7s - 8t) \end{aligned}$$

$$\begin{aligned} \text{b. } 7n^2 - 14n - 105 \\ = 7(n - 5)(n + 3) \end{aligned}$$

$$\begin{aligned} \text{c. } x^2 - x - 6 \\ = (x - 3)(x + 2) \end{aligned}$$

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$$\begin{aligned} \text{d. } 7x^2 - 28x - 35 \\ = 7(x - 5)(x + 1) \end{aligned}$$

$$\begin{aligned} \text{e. } 2x^2 - 18 \\ = 2(x^2 - 9) \\ = 2(x + 3)(x - 3) \end{aligned}$$

$$\begin{aligned} \text{f. } 25x^2 - 70x + 49 \\ = (5x - 7)^2 \end{aligned}$$

$$\begin{aligned} \text{g. } 3x^2 - 27 \\ = 3(x^2 - 9) \\ = 3(x + 3)(x - 3) \end{aligned}$$

$$\begin{aligned} \text{h. } 2x^2 + 24x + 72 \\ = 2(x^2 + 12x + 36) \\ = 2(x + 6)^2 \end{aligned}$$

$$\begin{aligned} \text{i. } x^2 - 9x + 20 \\ = (x - 5)(x - 4) \end{aligned}$$

12. Expand and Simplify:

$$\begin{aligned} (6p + 3)(6p - 7) - (7p - 4)(p - 2) &= 36p^2 - 42p + 18p - 21 - (7p^2 - 14p - 4p + 8) \\ &= 36p^2 - 24p - 21 - 7p^2 + 18p - 8 \\ &= 29p^2 - 6p - 29 \end{aligned}$$

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$$\begin{aligned} (5x - 3)^2 + 3(x - 1)(x + 2) &= 25x^2 - 30x + 9 + 3(x^2 + 2x - x - 2) \\ &= 25x^2 - 30x + 9 + 3x^2 + 3x - 6 \\ &= 28x^2 - 27x + 3 \end{aligned}$$

$$\begin{aligned} 5(x - 3)(x + 1) - (3x - 2)^2 &= 5(x^2 + x - 3x - 3) - (9x^2 - 12x + 4) \\ &= 5x^2 - 10x - 15 - 9x^2 + 12x - 4 \\ &= -4x^2 + 2x - 19 \end{aligned}$$

Practice way more than that !! Expand expand expand !!! Factor factor factor !!!
Ask me for more if you need more practice !