

Unit 4.1 Completing the square Examples

Period _____

Find the value that completes the square and then rewrite as a perfect square.

1) $n^2 + 24n + \underline{\quad}$

2) $r^2 + 20r + \underline{\quad}$

3) $x^2 - 2x + \underline{\quad}$

4) $n^2 - 32n + \underline{\quad}$

5) $x^2 - 30x + \underline{\quad}$

6) $y^2 - 36y + \underline{\quad}$

7) $p^2 + 16p + \underline{\quad}$

8) $x^2 - 16x + \underline{\quad}$

9) $m^2 - 18m + \underline{\quad}$

10) $y^2 - 6y + \underline{\quad}$

$$11) x^2 - \frac{1}{6}x + \underline{\quad}$$

$$12) m^2 + 17m + \underline{\quad}$$

$$13) p^2 - 7p + \underline{\quad}$$

$$14) n^2 + 13n + \underline{\quad}$$

$$15) x^2 + \frac{4}{3}x + \underline{\quad}$$

$$16) r^2 + \frac{3}{2}r + \underline{\quad}$$

$$17) z^2 - \frac{10}{7}z + \underline{\quad}$$

$$18) m^2 + 21m + \underline{\quad}$$

$$19) n^2 + 5n + \underline{\quad}$$

$$20) p^2 + 11p + \underline{\quad}$$

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Find the value that completes the square and then rewrite as a perfect square.

1) $n^2 + 24n + \underline{\quad}$

$144; (n + 12)^2$

2) $r^2 + 20r + \underline{\quad}$

$100; (r + 10)^2$

3) $x^2 - 2x + \underline{\quad}$

$1; (x - 1)^2$

4) $n^2 - 32n + \underline{\quad}$

$256; (n - 16)^2$

5) $x^2 - 30x + \underline{\quad}$

$225; (x - 15)^2$

6) $y^2 - 36y + \underline{\quad}$

$324; (y - 18)^2$

7) $p^2 + 16p + \underline{\quad}$

$64; (p + 8)^2$

8) $x^2 - 16x + \underline{\quad}$

$64; (x - 8)^2$

9) $m^2 - 18m + \underline{\quad}$

$81; (m - 9)^2$

10) $y^2 - 6y + \underline{\quad}$

$9; (y - 3)^2$

$$11) x^2 - \frac{1}{6}x + \underline{\hspace{1cm}}$$
$$\frac{1}{144}; \left(x - \frac{1}{12}\right)^2$$

$$12) m^2 + 17m + \underline{\hspace{1cm}}$$
$$\frac{289}{4}; \left(m + \frac{17}{2}\right)^2$$

$$13) p^2 - 7p + \underline{\hspace{1cm}}$$
$$\frac{49}{4}; \left(p - \frac{7}{2}\right)^2$$

$$14) n^2 + 13n + \underline{\hspace{1cm}}$$
$$\frac{169}{4}; \left(n + \frac{13}{2}\right)^2$$

$$15) x^2 + \frac{4}{3}x + \underline{\hspace{1cm}}$$
$$\frac{4}{9}; \left(x + \frac{2}{3}\right)^2$$

$$16) r^2 + \frac{3}{2}r + \underline{\hspace{1cm}}$$
$$\frac{9}{16}; \left(r + \frac{3}{4}\right)^2$$

$$17) z^2 - \frac{10}{7}z + \underline{\hspace{1cm}}$$
$$\frac{25}{49}; \left(z - \frac{5}{7}\right)^2$$

$$18) m^2 + 21m + \underline{\hspace{1cm}}$$
$$\frac{441}{4}; \left(m + \frac{21}{2}\right)^2$$

$$19) n^2 + 5n + \underline{\hspace{1cm}}$$
$$\frac{25}{4}; \left(n + \frac{5}{2}\right)^2$$

$$20) p^2 + 11p + \underline{\hspace{1cm}}$$
$$\frac{121}{4}; \left(p + \frac{11}{2}\right)^2$$