Honors Math 3

Dividing Polynomials

Use synthetic division.

1.  $(2x^2 + 3x - 35) \div (x + 5)$

2.  $(3x^2 - 4x - 4) \div (x + \frac{2}{3})$

3.  $(x^3 - x^2 - 17x + 12) \div (4 + x)$

4.  $(3x^3 - 2x^2 + 1) \div (x - 2)$

5.  $(x^3 - 5x^2 + 4x + 7) \div (x - 1)$

6.  $(2x^3 - 53x + 6) \div (x - 5)$

7.  $(x^3 + 2x^2 + 32) \div (x + 4)$

8.  $(3x^4 - 8x^3 - 5x^2 + 7x - 1) \div (x - 3)$

9.  $(4y^4 - 5y^2 - 8y + 3) \div (2y - 3)$

10.  $(2x^4 - 3x^3 - x + 2) \div (2x + 1)$

Find the remainder when the polynomial is divided by the binomial (use the remainder theorem).

11.  $x^2 - 1; \quad x - 2$

12.  $x^2 - x + 4; \quad x - 2$

13.  $x^2 - x + 6; \quad x + 3$

14.  $x^2 + 10x + 24; \quad x + 6$

15.  $3x^2 + 2x - 9; \quad x - 1$

16.  $5x^2 - 6x + 2; \quad x - 2$

17.  $-5x^2 - 11x + 3; \quad 1 - x$

18.  $2x^2 - x + 1; \quad x - \frac{1}{2}$

19.  $3x^2 - 8x + 4; \quad x - \frac{2}{3}$

20.  $x^3 + 9x^2 - 5; \quad x + 1$

21.  $x^3 + 2x^2 - 5x - 6; \quad x + 2$

22.  $-4x^3 + 11x^2 - 9x + 8; \quad 1 - x$

23.  $3x^3 - x^2 + x; \quad x - \frac{1}{2}$

24.  $x^4 - x^3 + x; \quad x + 2$

25.  $x^4 - 5x^3 + 2x^2 - 7x + 2; \quad x - 2$

26.  $4x^4 + 7x^3 - 2x^2 + x - 9; \quad x + 3$

27.  $x^4 - x^3 + 3; \quad x - \frac{1}{2}$

28.  $3x^4 + 6x^3 - 5x + 1; \quad x + \frac{2}{3}$

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1.
Answer:          $2x - 7$
CodePath:        EAS.TRI.G.A.12

2.
Answer:          $3x - 6$
CodePath:        EAS.TRI.G.A.21

3.
Answer:          $x^2 - 5x + 3$
CodePath:        EAS.TRI.G.A.27

4.
Answer:          $3x^2 + 4x + 8,\ R = 17$
CodePath:        EAS.TRI.G.A.45

5.
Answer:          $x^2 - 4x,\ R = 7$
CodePath:        EAS.TRI.G.A.34

6.
Answer:          $2x^2 + 10x - 3,\ R = -9$
CodePath:        EAS.TRI.G.A.58

7.
Answer:          $x^2 - 2x + 8$
CodePath:        EAS.TRI.G.A.41

8.
Answer:          $3x^3 + x^2 - 2x + 1,\ R = 2$
CodePath:        EAS.TRI.G.A.95

9.
Answer:          $2y^3 + 3y^2 + 2y - 1$
CodePath:        EAS.TRI.G.A.101

10.
Answer:          $x^3 - 2x^2 + x - 1,\ R = 3$
CodePath:        EAS.TRI.G.A.105

11.
Answer:          3
CodePath:        EAS.TRI.G.B.1

12.
Answer:          6
CodePath:        EAS.TRI.G.B.12

13.
Answer:          18
CodePath:        EAS.TRI.G.B.14

14.
Answer:          0
CodePath:        EAS.TRI.G.B.18

15.
Answer:          $-4$
CodePath:        EAS.TRI.G.B.22

16.
Answer:          10
CodePath:        EAS.TRI.G.B.24

17.
Answer:          $-13$
CodePath:        EAS.TRI.G.B.30

18.
Answer:          1
CodePath:        EAS.TRI.G.B.33

19.
Answer:          0
CodePath:        EAS.TRI.G.B.37

20.
Answer:          3
CodePath:        EAS.TRI.G.B.44

21.
Answer:          4
CodePath:        EAS.TRI.G.B.47

22.
Answer:          6
CodePath:        EAS.TRI.G.B.59

23.
Answer:          $\frac{5}{8}$
CodePath:        EAS.TRI.G.B.69

24.
Answer:          22
CodePath:        EAS.TRI.G.B.74

25.
Answer:          $-28$
CodePath:        EAS.TRI.G.B.83

26.
Answer:          105
CodePath:        EAS.TRI.G.B.88

27.
Answer:          $2\frac{5}{16}$
CodePath:        EAS.TRI.G.B.101

28.
Answer:          $3\frac{4}{27}$
CodePath:        EAS.TRI.G.B.106