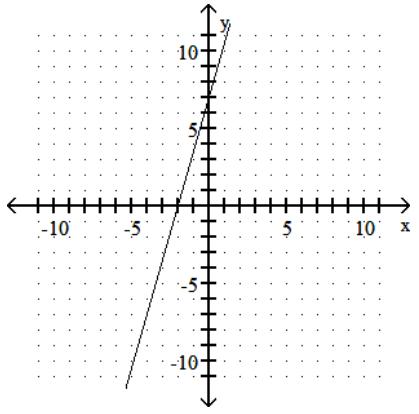
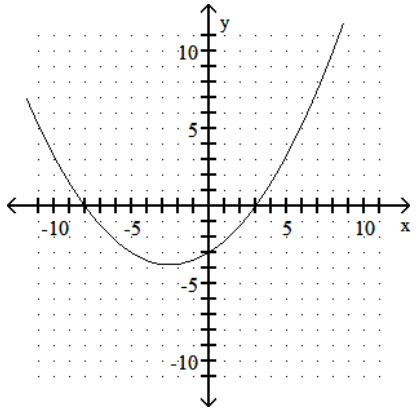
Test 2 Review

SHORT ANSWER. Write the word or phrase that best completes each statement or answers the question.

Identify any x-intercepts and y-intercepts in the graph respectively.

1) 

1) _____

2) 

2) _____

Factor out the greatest common factor.

3) $48m^9 + 60m^5 - 60m^3$ 3) _____

4) $4x(2x - 3) - 5(2x - 3)$ 4) _____

Factor by grouping.

5) $r^3 + r^2 + 3r + 3$ 5) _____

6) $12r^2 + 9ry - 4xr - 3xy$ 6) _____

Factor completely. If the polynomial cannot be factored, write prime.

7) $x^2 - x - 20$ 7) _____

8) $x^2 + 4x - 60$ 8) _____

Factor completely.

9) $2x^7 - 32x^6 + 126x^5$ 9) _____

10) $8y^5 - 16y^4 + 20y^2$ 10) _____

Factor by grouping.

11) $20z^2 - 7z - 6$ 11) _____

12) $15z^2 + 14z - 8$ 12) _____

Factor completely.

13) $18x^2 - 78x - 60$ 13) _____

14) $6x^2y^2 + 19xy^2 + 10y^2$ 14) _____

15) $-2r^2 + 17rt - 8t^2$ 15) _____

16) $9y^4 - 48y^3 + 48y^2$ 16) _____

Factor the binomial completely. If it is prime, say so.

17) $64x^2 - 9$ 17) _____

18) $169k^2 - 49m^2$ 18) _____

Solve the equation.

19) $(x - 2)(x + 4) = 0$ 19) _____

20) $\left(x + \frac{1}{4}\right)\left(x - \frac{2}{5}\right) = 0$ 20) _____

21) $x^2 + 9x + 8 = 0$ 21) _____

22) $n^2 - 49 = 0$ 22) _____

Solve the problem.

23) A rectangle has a length of $x + 2$ and a width of $x - 2$, and has an area of 60 square units. Find the length and width of the rectangle. ($A = LW$) 23) _____

Write the rational expression in lowest terms.

24) $\frac{10k^3}{5k}$ 24) _____

25) $\frac{(y + 7)(y - 2)}{(y - 2)(y + 6)}$ 25) _____

26) $\frac{9 - m}{m - 9}$ 26) _____

27) $\frac{x^2 - s^2}{s - x}$ 27) _____

Multiply. Write the answer in lowest terms.

28) $\frac{2z^3}{4} \cdot \frac{24}{z^2}$ 28) _____

29) $\frac{3x^2}{5} \cdot \frac{30}{x^3}$ 29) _____

Multiply or divide as indicated. Write the answer in lowest terms.

30) $\frac{2r - 6}{14r^2 + 28r} \cdot \frac{7r + 14}{12 - 4r}$ 30) _____

31) $\frac{y^3 - 9y}{y^2 - 81} \div \frac{y^2 + 16y + 60}{y^2 + 15y + 54}$ 31) _____

Factor the polynomial completely.

32) $8s^3 + 1$ 32) _____

33) $250k^3m - 128m^4$ 33) _____

1) $-2; 7$
2) -8 and 3; -3
3) $12m^3 (4m^6 + 5m^2 - 5)$
4) $(4x - 5)(2x - 3)$
5) $(r^2 + 3)(r + 1)$
6) $(4r + 3y)(3r - x)$
7) $(x + 4)(x - 5)$
8) $(x + 10)(x - 6)$
9) $2x^5(x - 7)(x - 9)$
10) $4y^2(2y^3 - 4y^2 + 5)$
11) $(4z - 3)(5z + 2)$
12) $(3z + 4)(5z - 2)$
13) $6(3x + 2)(x - 5)$
14) $y^2(3x + 2)(2x + 5)$
15) $-1(2r - t)(r - 8t)$
16) $3y^2(3y - 4)(y - 4)$
17) $(8x + 3)(8x - 3)$
18) $(13k + 7m)(13k - 7m)$
19) $\{2, -4\}$
20) $\left\{-\frac{1}{4}, \frac{2}{5}\right\}$
21) $\{-8, -1\}$
22) $\{-7, 7\}$
23) width = 6 units; length = 10 units
24) $2k^2$
25) $\frac{y + 7}{y + 6}$
26) -1
27) $-x - s$
28) $12z$
29) $\frac{18}{x}$
30) $-\frac{1}{4r}$
31) $\frac{y(y^2 - 9)}{(y - 9)(y + 10)}$
32) $(2s + 1)(4s^2 - 2s + 1)$
33) $2m(5k - 4m)(25k^2 + 20km + 16m^2)$